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ANNUAL REPORT  
OF THE  
TRUSTEES  
OF THE  
STORRS AGRICULTURAL SCHOOL,  
AT  
MANSFIELD, CONN.  
1885.

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Printed by order of the General Assembly.

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HARTFORD, CONN.:  
PRESS OF THE CASE, LOCKWOOD & BRAINARD COMPANY.  
1886.

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# THE STORRS AGRICULTURAL SCHOOL.

MANSFIELD, CONNECTICUT.

1885-6.

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## TRUSTEES.

		Term Expires.
Gov. HENRY B. HARRISON,	NEW HAVEN, <i>President.</i>	
	<i>Vice-President,</i>	1886.
T. S. GOLD,	WEST CORNWALL,	
	<i>Secretary and Auditor,</i>	1887.
J. P. BARSTOW,	NORWICH, <i>Treasurer,</i>	1887.
S. O. VINTON,	EAGLEVILLE, <i>Auditor,</i>	1886.
PROF. S. W. JOHNSON,	NEW HAVEN, <i>Director of Con-</i>	
	<i>necticut Experiment Station.</i>	
J. B. OLCOTT,	SOUTH MANCHESTER,	1888.
J. M. HUBBARD,	MIDDLETOWN,	1888.
E. H. HYDE,	STAFFORD, <i>Appointed by the</i>	
	<i>Board of Agriculture.</i>	

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## OFFICERS OF THE SCHOOL.

B. F. KOONS, Ph.B., M.A.,	<i>Principal: Professor of Biology and</i>
	<i>Natural History.</i>
JOHN H. WASHBURN, B.S.,	<i>Professor of Chemistry and Mathematics.</i>
L. P. CHAMBERLAIN,	<i>Professor of Horticulture, Agriculture, and Farm</i>
	<i>Superintendent.</i>
Mrs. L. P. CHAMBERLAIN,	<i>Matron.</i>



# REPORT.

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*To the General Assembly of the State of Connecticut :*

In behalf of the Trustees of the Storrs Agricultural School, I have the honor to present the following report:

It embraces copy of the Act establishing the School, reports of the several departments of instruction, inventory, general course of study, commencement exercises, account of library, donations, calendar, catalogue of students, and report of the treasurer.

The plea for more ample accommodations is fully endorsed, believing that it should be the policy of the State to make as ample provisions for instruction in agriculture as in other departments of learning. When the citizens of the State can see that this is not done for the benefit of the farmers alone, but that all share in its blessings, they will cheerfully unite in encouraging a more intelligent agriculture.

T. S. GOLD,

*Secretary Board of Trustees.*

## REPORT OF THE PRINCIPAL.

*To the Trustees of the Storrs Agricultural School :*

GENTLEMEN: I herewith have the honor to submit, for your consideration, the Annual Report of the Storrs Agricultural School for the year 1885. As the Act of Establishment is somewhat explicit in detail, I give it here in full for the information of all who may wish to know the object for which the school was organized.

### AN ACT ESTABLISHING THE STATE AGRICULTURAL SCHOOL.

GENERAL ASSEMBLY,

JANUARY SESSION, A.D. 1881.

*Be it enacted by the Senate and House of Representatives in General Assembly convened :*

SECTION 1. The Storrs Agricultural School is hereby established for the education of boys, whose parents are citizens of this State,

in such branches of scientific knowledge as shall tend to increase their proficiency in the business of agriculture.

SEC. 2. There shall be appointed by the Senate six trustees of said school, two of whom shall, in the first instance, hold office for two years, two for three years, and two for four years, said terms to be determined by lot; and after the first election such trustees shall be elected for three years, or to fill an unexpired term. The Connecticut Board of Agriculture shall also, annually, elect a trustee, and the director of the Connecticut Agricultural Experiment Station shall be *ex officio* one of said trustees. The governor of the State shall be *ex officio* president of said board of trustees.

SEC. 3. Said board of trustees, when elected in accordance with the provisions of the foregoing section, shall be, and hereby are, empowered to take, in behalf of the State of Connecticut, deeds of such lands and other property, and such money, as may be donated for the purpose of establishing and maintaining said school.

SEC. 4. To said board of trustees shall be committed the location of said school, the application of the funds for the support thereof, the appointment of managers and teachers, and the removal of the same; the power to prescribe the studies and exercises of pupils in said school, rules for its management, and the admission of pupils; and they shall annually report to the General Assembly the condition of said school.

SEC. 6. The sum of five thousand dollars is hereby appropriated annually for three years for the support of said school, provided lands, buildings, and other property, or money, amounting in the aggregate to fifteen thousand dollars, as appraised by said trustees, shall be donated to the State for the establishment and support thereof, and the comptroller is hereby directed to draw orders on the treasurer quarterly for such a total amount upon the presentation of a certificate signed by the board of trustees, or a majority thereof, that the said school has been in operation during the quarter, and a like sum expended.

Also, for the information of those who desire to know more of the school, and to be the better able to answer frequent inquiries for facts concerning its plan of work, course of instruction, and details in general, we issued the following prospectus in June:

## PROSPECTUS.

Section 1 of the Act of the General Assembly establishing the school reads as follows : "The Storrs Agricultural School is hereby established for the education of boys, whose parents are citizens of this State, in such branches of scientific knowledge as shall tend to increase their proficiency in the business of agriculture."

## LOCATION.

The school is situated in the town of Mansfield, Tolland County, one of the most healthful regions of the State, and its railroad station is Eagleville, on the New London Northern road, eight miles north of Willimantic.

## COURSE OF STUDY.

As stated above, the object of the school is to teach practical and scientific agriculture and horticulture, yet, as subservient and necessary to this purpose, various other branches of study are taught, especial prominence being given to those most necessary for the successful prosecution of agriculture.

The full course of study requires two years of three terms each, each term being twelve weeks long, or the school year aggregating thirty-six weeks. For the arrangements of the terms and vacations, see the calendar at the end of the prospectus. Students receive instruction both in the class-room and upon the farm.

In the class-room they study those branches of natural science, and only those, which have a directly useful bearing upon New England farming, and the in-door work is made to harmonize with that upon the farm and in the garden. The branches pursued are General and Agricultural Chemistry, Natural Philosophy, Farm Mechanics, Elementary Geometry, Land Surveying, Botany, Zoölogy, which includes especially domestic animals and insects injurious to crops of the farm and garden; Geology, Human and Animal Physiology, Agriculture, Farm Accounts, Stock Breeding, Milk Production, and English; taking up first the general principles of these sciences, and afterwards their special application to practical agriculture.

On the farm they are taught the practical applications of the principles learned in the class-room to every kind of farm-work, so that each boy may become skillful in the management of a farm, and, that this may be accomplished, the ordinary chores of the

farm, the proper care of all kinds of stock, milking, driving of oxen and horses, and the farm-work in general are so arranged, and each student is assigned some portion of these, and changes of work are made as often as necessary, that every boy while a member of the school may have an opportunity to learn how to do all kinds of farm and garden work, and the best method of accomplishing each.

#### FACILITIES FOR INSTRUCTION.

The school possesses a farm of 170 acres, well fitted for purposes of instruction, and provided with school building, barns, and out-buildings, all of which was the gift of Mr. Augustus Storrs, and to this the late Mr. Charles Storrs added six thousand dollars, and this, together with the State bounty, has been expended in stocking the farm, making necessary changes, purchasing the outfit, and paying the running expenses of the school.

The school possesses apparatus to illustrate some of the most important facts of chemistry and physics, and the biological laboratory is supplied with compound and dissecting microscopes, both mounted and unmounted skeletons of the domestic animals, a small collection of insects injurious to farm and garden crops, and a few specimens of their destructive work. The cabinet also contains a reasonable representation of the rocks, ores, and minerals of the State. A library of nearly nine hundred standard books of reference, scientific, agricultural, and miscellaneous, is at all times accessible to the students, and to this number the friends of the school are constantly making additions.

#### REQUIREMENTS FOR ADMISSION.

According to the Act of Incorporation, the school is for "The education of boys whose parents are citizens of the State." Applicants must be at least fifteen years of age, and must furnish a certificate of good moral character from a clergyman or member of the Board of School Visitors of the town where they reside. They must be able to read and write ordinary English correctly and intelligently, and must be familiar with simple arithmetic, including common and decimal fractions, proportion, and percentage, and have a fair knowledge of geography and American history.

No pupils will be received into the classes after the beginning

of the school year, except those who can sustain a satisfactory examination in all the studies which have been pursued by the class they wish to join.

New classes are not formed at any other time than the beginning of the school year, which is at the opening of the fall term in September; hence those who contemplate entering the School would do well to make application, at least as early as September 1st, and present themselves for the entering examination at the proper time.

#### DEPORTMENT.

Every pupil, on becoming a member of the school, thereby pledges himself to obedience to its rules, and to a diligent performance of his duties.

Students are expected at all times to demean themselves in a quiet and gentlemanly manner. No student will be allowed to remain in the school, who, by misconduct or indolence, shows himself unworthy of its benefits.

The regulations of the school require all pupils to attend church once on the Sabbath.

#### SPECIAL STUDIES.

Young men, suitably qualified, may be received into the school, after due examination, as Special Students, to pursue a part of the studies of the regular course, on condition that their time shall be fully and profitably occupied.

#### DIPLOMAS.

Students who have completed the full two-years' course of study, and have maintained a fair standing in deportment, study, and work, will receive a diploma of graduation.

#### EXPENSES.

By the liberality of the Messrs. Storrs, and with the help of the State bounty, the Trustees are enabled to offer first-class instruction at the low rate of \$10.00 per term, or \$25.00 per year; \$10.00 payable at the opening of the first and second terms each, and \$5.00 at the opening of the third. Arrangements are made for remitting this charge in worthy cases, making tuition free to those who are not able to pay it.

Good board, including furnished rooms, washing, fuel, and lights,



will be furnished at cost, which will vary with the price of provisions. At the end of each quarter the running expenses of the boarding department for the term are divided among the whole number present. During the past history of the school the board has averaged about \$3.50 per week.

The text-books used in the school are bought at reduced rates and furnished to the students at cost.

Individual records of labor, other than that performed for purposes of instruction, will be kept, and reasonable compensation allowed for it.

Extra labor, as far as is practicable, will be furnished to those who desire it towards self-support, when it can be performed without interference with regular duties.

#### HOURS OF LABOR AND STUDY.

During the fall and winter terms, when the necessities of the farm demand it, the students are required to spend three hours daily upon the farm, and six or more upon study, laboratory work, and recitations, one class going to the farm in the forenoon and the other in the afternoon. And during the spring term five hours a day are required upon the farm, and five or more in school work.

Under the direction of the farm superintendent the students do all kinds of farm-work, including care of stock, milking, and chores.

I ventured to suggest, in the last annual report, our need of better accommodations in the chemical laboratory, also the overcrowded condition of the dormitory, and it is hoped that these difficulties will be speedily remedied.

My laboratory, being in the basement, is so damp and cellar-like that it is necessary to keep fire in it even in quite moderate weather.

Another very pressing need of the school is a well-equipped carpenter shop. It is my desire to add this feature to our work here, so that every boy may receive competent instruction in the use of the saw, square, chisel, plane, etc., and gain sufficient skill in the handling of these tools to do the ordinary work in repairs of the farm buildings and implements.

It is hardly necessary for me to enter into a detailed account of my own part of the school-work proper, the branches in which I have given instruction being the same as in former years; viz., Human and Animal Anatomy and Physiology, Zoology, Botany, Geology, etc., etc. For the amount of time devoted to each I would refer you to the appended schedule of lecture, laboratory, and class-room work. The methods of instruction have been practically what they were in former years, and as far as our facilities would permit we have tried to keep pace with the advanced methods of instruction of the times. For the work done in other departments I refer you to the following reports :

#### REPORT OF PROF. J. H. WASHBURN.

MANSFIELD, Conn., Jan 1, 1886.

*To the Trustees of the Storrs Agricultural School :*

GENTLEMEN : I have the honor herewith to submit the following report : My instruction in chemistry consists of text-book work, in "Avery's Complete Chemistry," with explanations and experiments before the class. During the first term, the properties and tests of the non-metals are studied; I constantly apply their chemistry, by lecture, in the explanation of the phenomena connected with growth and decay. The winter term is occupied with the Juniors, in the study of the metals; experiments illustrating their chemical properties, the test for each metal, the preparation of the elementary gases — non-metals studied the term before, — and a repetition of many of my experiments of the previous term is now performed in the laboratory by each student for himself.

At the beginning of the third term, the students are well prepared to begin qualitative analysis; at first, they begin analyzing mixtures of metals; next, animal and other organic matters, fertilizers and ashes; nine or ten hours a week are spent at laboratory work.

In the Senior year, one term is devoted to organic chemistry, taking sufficient of the theoretical portion to understand the explanations of the formation and constitution of acetic, formic, lactic, and other organic acids which are met ordinarily in agricultural

operations. Considerable attention is given to the study of alcohols, albuminoids, the volatile oils of plants, and the poisonous alkaloids.

Agricultural chemistry occupies a portion of the Senior year. This course consists in the study of Professor Johnson's "How Crops Grow," "How Crops Feed," and the theoretical portion of Professor Armsby's "Cattle Feeding"—the practical part being left for the instruction in Agriculture. I have given lectures upon the work and results of the different Experiment Stations, their analysis of fertilizers and fodder stuffs. No young man graduates from our school without understanding the analyses and tables of our Experiment Station Reports. Lectures are given upon the application of special fertilizers to special crops, and the manufacture of "home fertilizers." We have made super-phosphate with bone and acid, and it has been used, with most excellent results, upon our crops. The analysis of these fertilizers, and estimation of their value, the analysis of water, minerals, ashes, poisons, and miscellaneous materials, I have made for the purposes of instruction.

#### LABORATORY.

Each student, upon entering the laboratory, takes an outfit necessary for the term's work; this is charged to him, at cost; it is taken back at the end of the term; the natural wear of the wooden and iron articles is not charged to the students; however, any breakage of glassware, and deterioration of articles through careless handling, must be paid for by the student using it.

#### NATURAL PHILOSOPHY.

Instruction in this branch of science extends throughout the Junior year. Our text-book, Ganot's Physics.

As much of the teaching in this science is experimental, we should have as complete a set of apparatus as that provided for the best high schools.

#### MATHEMATICS AND SURVEYING.

Plane Geometry and Trigonometry, with the use of Logarithms, is taught, to prepare the student for surveying, as found in Gillespie's "Land Surveying." Every member of the class learns how to use the chain and compass; each one does practical work in ordinary land measurement, leveling, "running out old lines," and calculations of the amount of earth to be removed from ditches, trenches, etc., and the cost thereof.



## ENGLISH.

The course in English comprises recitations three hours per week, during the first term of the Senior year, in Whitney's "Essentials of English Grammar." The second and third terms are devoted to Composition and Essay Writing. Then we use as a text-book "Hart's Composition and Rhetoric."

I am, very respectfully, your obedient servant,

JOHN H. WASHBURN.

## REPORT OF PROF. L. P. CHAMBERLAIN.

*To the Trustees of the Storrs Agricultural School:*

GENTLEMEN: A year ago I gave you, somewhat in detail, the condition of the Storrs School farm, as it appeared to me from a strictly practical standpoint, after a single year's acquaintance, hinting also at some of its needs, in order to make it more fully meet the demands of the school, in illustrating the practical side of a true agricultural education. Pardon me, if now my statements and suggestions shall seem to you to be hardly more or less than a recapitulation of those contained in my former report, for the demands of the school are the same, and the needs of the farm are no less urgent. In fact, a single year has shown that the farm is easily capable of outgrowing all our accommodations for storing its various products, and of a profitable return for a much more liberal investment of the ordinary means of increasing its productiveness. The soil responds readily and bountifully to proper cultivation, and only waits for the touch of a friendly hand, instead of one that is ready to clutch all it can get but never opens to restore an equivalent for that which it receives. For a series of years prior to its purchase by Mr. Storrs it had been sadly neglected. All practical farmers know that such a farm cannot, out of its own resources, be renovated without years of careful, intelligent, and economical expenditure of both labor and material. As we have no means of purchasing any considerable amount of concentrated fertilizers, the above is the practical problem which we are trying to solve, by increasing from year to year our supply of the common farm manures. I am satisfied that, with our depleted soils, learning to husband all our resources of fertility is a lesson of great importance for all our students, and not even secondary to a knowledge

of their most judicious application to the various soils which distinguish this farm as a place for instruction. We have here almost every variety of soil to be found in Connecticut, from the sandy formation, containing more than ninety per cent. of silica, to the tracts of muck land, which include nearly thirty acres, or more than one-sixth of the entire area of the farm. About forty acres are underlaid with clay, which also forms a prominent element of the surface soil, and renders it capable of withstanding our annual summer drouths. A large portion of this tract has been cropped during the past year, and next year nearly all of it will be put under cultivation. It has been my purpose thus far to bring as many acres as possible into a fairly productive condition, rather than to enrich a few acres, at the expense of the many that have been so long neglected. To accomplish this, quite a number of acres have been plowed and cropped, with little expectation beyond that of subjugating the soil preparatory to better treatment and results the coming season, but in nearly all cases the return has exceeded our anticipations. The school year, beginning as it does in September, and closing in June, leaves the farm for three months, and during the busiest period of cultivation and harvest, with only such students as may be hired to remain and work for monthly wages. This, while it is the same as at Ontario, and most of the agricultural colleges in the eastern and western States, interferes both with the amount of production otherwise possible and the best instruction of the students. All our plans must now be limited by this condition. Would not the school and the farm profit by a change which would release the students during the winter, instead of the summer months?

#### LABOR.

The labor of the students employed upon the farm during the year, at eight cents per hour, aggregates \$1,075.33. This is equivalent to the cost of employing three men at sixteen dollars per month, and board, for the entire year. Most of this labor has been cheerfully and faithfully performed, and with a fair degree of efficiency. Of course we find a great diversity of gifts, but all are required to do the best they can, and I am happy to say that, in most instances, this requirement is cheerfully met. It has been my aim to inculcate faithfulness and thoroughness, as the most essential qualities of farm labor, and have insisted upon tidiness and

order as indispensable. The rule has been to provide a place for everything, and then to have every implement put in its own place. This rule, however, like all others, has frequent exceptions.

#### FERTILIZERS.

The fertilizers used have been mainly produced upon the farm. A single ton of Coe's Phosphate is the only exception, besides a small amount left over from the preceding year. Much attention has been given to this department, and we have been able to fairly treat about ten acres the present season, while the preceding year four acres only were fertilized. As our stock increases, our facilities for enriching our waiting acres will also increase, and it is our purpose to make the most of them.

#### LIVE STOCK.

Some changes have been made in the live stock, particularly in the addition of a Guernsey bull, the gift of Mr. C. N. Beach of Vine Hill Farm at Elmwood, and a Guernsey heifer, purchased from Mr. Brown.

The farm horses are well adapted to the heavy work of the farm and the road. The driving horse is now in excellent condition, while a year ago it was a matter of doubt whether she would recover from a serious lameness which, for a time, almost disabled her from ordinary service.

#### CROPS.

Our crops include most of the common varieties of grain and vegetables, also forage of various kinds. These have been quite satisfactory when we compare them with our outlay of fertilizers for their production.

The hay crop suffered most severely from drouth, as it has for a number of years. This fact suggests to us the question, whether our changed climatic conditions should not teach us to make this more an incidental and less an objective crop in our farm economy.

We are able to report a large increase of forage over last year. Our corn fodder is a most valuable feed, and furnishes an excellent substitute, if not a full equivalent, for as many tons of hay, grown at a much greater cost. Our roots, also, are a very essential and valuable food for all classes of farm stock.

## PERMANENT IMPROVEMENTS.

I have but little to report in this department. Beyond the completion of the removal of boulders from two fields where most of the digging and blasting had been done prior to the enactment of the legislative prohibition, but little has been done. Even the erection of a very cheap building for the comfort of our "æsthetic" poultry, has thus far been postponed, though the material, furnished by the farm, was in readiness, and the students would have put it into form.

## EXPERIMENTS.

Our limited means have prevented us from attempting anything in the way of costly experiments. Besides the cost of conducting experimental work upon the farm in labor and material, there is the element of uncertainty in results, so that the simple question of economy would lead us to adopt those methods which are already well understood and surest to result in success. I trust the time will yet come when we shall be permitted to aid in solving, by careful experiment, some of the questions which are pressing us with their importance.

## DAIRY.

At the beginning of the year we had seven cows. Our dairy animals now number the same, as two have been sold, and two heifers have since been added, one from the farm, and one by purchase. The quality of these animals is superior, as I think the record of butter and milk given below will show. Our butter, which is made with the help of a Moseley Creamer at the farmhouse, under the direction of Mrs. Goddard, is of excellent and uniform quality. We need more cows for the coming season. A number of heifers reared upon the farm will soon increase the number, which should not be less than twelve. There have been made during the year 1,534 pounds of butter. Besides this, 3,781 quarts of new milk have been furnished to the school boarding department.

In closing my report, allow me to return to you all my thanks for your many expressions of confidence in my well-intended efforts to aid you in making the Storrs School what its generous founder hoped it might become, under the fostering care of the State and your wise direction.

L. P. CHAMBERLAIN, *Farm Supt.*

## FARM AND GARDEN PRODUCTS, 1885.

18	tons of hay (new seeding),	.	.	.	\$288.00
6	tons of stock hay,	.	.	.	72.00
4	tons of swamp hay,	.	.	.	40.00
10	tons of corn fodder,	.	.	.	140.00
1 $\frac{1}{2}$	tons of rye straw,	.	.	.	18.00
3 $\frac{1}{2}$	tons of oat straw,	.	.	.	42.00
1	ton of Hungarian hay,	.	.	.	16.00
$\frac{3}{4}$	ton of squashes,	.	.	.	22.50
247	bushels of mangolds,	.	.	.	49.40
76	bushels of table beets,	.	.	.	19.00
113	bushels of fall turnips,	.	.	.	11.30
70	bushels of Swedish turnips,	.	.	.	17.50
15	bushels of carrots,	.	.	.	3.00
5	bushels of parsnips,	.	.	.	2.00
4	bushels of onions.	.	.	.	3.00
15	bushels of green corn,	.	.	.	11.25
6	bushels of green beans,	.	.	.	6.00
5	bushels of dry garden beans,	.	.	.	10.00
8	bushels of field beans,	.	.	.	12.00
5	bushels of peas,	.	.	.	5.00
20	bushels of tomatoes,	.	.	.	12.00
10	bushels of spinach,	.	.	.	5.00
11	bushels of cucumbers,	.	.	.	8.25
12	bushels of pears,	.	.	.	6.00
60	bushels of apples,	.	.	.	15.00
10	bushels of sweet corn, for seed,	.	.	.	5.00
547	bushels of ears of field corn,	.	.	.	164.10
175	bushels of oats,	.	.	.	70.00
47	bushels of rye,	.	.	.	32.90
21	bushels of buckwheat,	.	.	.	12.60
530	bushels of potatoes,	.	.	.	265.00
64	quarts of raspberries,	.	.	.	6.40
40	quarts of currants,	.	.	.	4.00
17,641	quarts of milk,	.	.	.	529.23
640	pounds of pork,	.	.	.	38.40
173	pounds of poultry,	.	.	.	25.95
200	pounds of rhubarb,	.	.	.	5.00
500	cabbages,	.	.	.	20.00





## LIVE STOCK ON FARM, Dec. 31, 1885.

1	pair of oxen,	.	.	.	.	\$180.00
1	pair of two-years-old steers,	.	.	.	.	100.00
1	Guernsey bull (Marim),	.	.	.	.	100.00
1	Guernsey heifer,	.	.	.	.	150.00
1	Durham heifer,	.	.	.	.	75.00
6	grade cows,	.	.	.	.	250.00
3	grade heifers,	.	.	.	.	75.00
2	grade calves,	.	.	.	.	30.00
1	pair farm horses,	.	.	.	.	400.00
1	family horse,	.	.	.	.	100.00
4	breeding swine,	.	.	.	.	60.00
1	fat hog,	.	.	.	.	15.00
4	pigs,	.	.	.	.	15.00
35	Plymouth Rock fowls,	.	.	.	.	26.25
1	trio bronze turkeys,	.	.	.	.	12.00
						<hr/>
						\$1,388.25

Farm implements on hand, December 31, 1885,

Aggregate valuation, . . . . \$940.00

Joiner's tools, axes, and saws on hand Dec. 31, 1885,

Aggregate valuation, . . . . \$32.50

## TABLE SHOWING AMOUNT OF LAND DEVOTED TO EACH CROP,

5	acres of field corn.
$\frac{1}{2}$	acre of sweet corn.
$\frac{3}{4}$	acre of fodder corn.
4	acres of oats.
$2\frac{1}{2}$	acres of rye.
3	acres of potatoes.
$\frac{1}{2}$	acre of mangolds.
$\frac{1}{4}$	acre of turnips.
$1\frac{1}{2}$	acres of garden products.
2	acres of buckwheat.
$\frac{1}{4}$	acre of field beans.
$1\frac{1}{2}$	acres of soiling.
$\frac{1}{2}$	acre Hungarian.

Office furniture,	.	.	.	.	.	\$30.50
Library,	.	.	.	.	.	825.00

Physical and Chemical Apparatus and Chemicals,	\$725.00
Biological Laboratory,	220.44
Household furniture,	1,950.60
Dining-room and kitchen furniture,	320.50
Laundry,	35.40

## LABOR OF STUDENTS.

Farm,	\$1,075.33
School,	167.86
Boarding Department,	133.92
Farm and School Buildings,	35.22

The following schedules indicate the amount of time given to lectures, recitations, and laboratory work in each study during the year:

## WINTER TERM, 1885.

## SENIOR CLASS.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
Stock Breeding,.....	2-3	.....	2-3	2-3	.....
Rhetoric, .....	3-4	.....	.....	.....	.....
Science of Agriculture,.....	.....	2-3	.....	.....	2-3
Organic Chemistry,.....	.....	.....	.....	3-4	.....
Cattle Feeding,.....	.....	3-4	3-4	.....	.....
Zoölogy,.....	.....	.....	.....	.....	3-4
Surveying,.....	4-5	4-5	4-5	4-5	4-5

## JUNIOR CLASS.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
Geology,.....	9-10	9-10	.....	.....	.....
Botany,.....	10-11	.....	9-10	.....	.....
Physiology,.....	.....	.....	.....	9-10	8-9
Zoölogy,.....	.....	.....	.....	.....	9-10
Chemistry,.....	.....	10-11	10-11	10-11	10-11
Physics,.....	11-12	11-12	11-12	11-12	11-12



## SPRING TERM, 1885.

## SENIOR CLASS.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
Cattle Feeding.....					2-3
Science of Government,...	2-3	2-3			
Botany,.....		3-4	2-3		
Political Economy,.....				2-3	3-4
Fertilizers,.....	3-4				
Rhetoric,.....	4-5				4-5
Book-keeping,.....		4-5			
Surveying,.....			3-5	3-5	

## JUNIOR CLASS.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
Zoölogy,.....	9-10				
Geology,.....	10-11	9-10			
Physiology,.....			9-10	9-10	
Botany,.....					9-10
Chemistry,.....	10-12	10-12	10-12	10-12	10-12

Owing to the absence of Prof. Washburn in Germany, the following schedule was followed during the first five weeks of the term, till October 28th.

## FALL TERM, 1885.

## SENIOR CLASS.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
Botany,.....	2-3	2-3	2-3	2-3	2-3
Stock Breeding,.....	3-4	3-4	3-4	3-4	3-4
Entomology,.....	4-5		4-5	4-5	
English,.....		4-5			4-5

## JUNIOR CLASS.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
Physiology,.....	9-10	9-10	9-10	9-10	9-10
Botany,.....	10-11	10-11	10-11	10-11	10-11
Anatomy and Physiology of Domestic Animals,...	11-12	.....	11-12	.....	11-12
English, .....	.....	11-12	.....	11-12	.....

After October 28th to the close of the term, December 22d, the following schedule was used:

## SENIOR CLASS.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
Botany,.....	.....	2-3	2-3	.....	.....
Stock Breeding,.....	.....	.....	.....	2-3	2-3
Entomology,.....	2-3	.....	.....	.....	.....
Organic Chemistry,.....	3-4	3-4	3-4	3-4	3-4
Agricultural Chemistry,...	4-5	4-5	.....	.....	.....
English,.....	.....	.....	4-5	4-5	4-5

## JUNIOR CLASS.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
Physiology,.....	.....	9-10	9-10	.....	.....
Botany,.....	.....	.....	.....	9-10	9-10
Anatomy and Physiology of Domestic Animals,...	9-10	.....	.....	.....	.....
Chemistry,.....	10-11	10-11	10-11	10-11	10-11
Physics, .....	11-12	11-12	11-12	11-12	11-12

## COMMENCEMENT EXERCISES.

The graduating exercises of the third class completing the prescribed course of study were held in the Congregational Church, June 19. The following is the programme presented on that occasion:

## PRAYER.

## MUSIC BY ORCHESTRA.

## EXERCISES OF THE GRADUATING CLASS.

ROBERT A. AYER, . . . . . Saybrook  
Bees and their Management.

HORACE S. EATON, . . . . . Chaplin  
Force on the Farm.

SOLO, . . . . . Miss Marion Keeney  
"The Quaker's Daughter."

FRANK E. FENNER, . . . . . Mansfield  
The Climatic Influence of the Forest.

ARCHER C. FORD, . . . . . Romford  
The Formation of Soils.

## MUSIC BY ORCHESTRA.

ROYAL E. MEYERS, . . . . . Litchfield  
Insects Injurious to the Garden.

ISAAC B. WAKEMAN, . . . . . Saugatuck  
Progressive Agriculture.

SOLO, . . . . . Miss Marion Keeney  
"Sailed."

ADDRESSES BY HIS EXCELLENCY, GOV. HENRY B HARRISON,

HON. WM. EDGAR SIMONDS.

## MUSIC BY ORCHESTRA.

HON. CHARLES M. JOSLYN.

## MUSIC BY ORCHESTRA.

## CONFERRING OF DIPLOMAS.

## BENEDICTION.

## THE LIBRARY.

During the year the library has received 235 bound volumes, besides a large number of pamphlets. Of these Mrs. Storrs, wife

of the late Charles Storrs, gave 128 volumes, comprising the complete works of Sir Walter Scott, Dickens, Thackeray, Cooper, and Washington Irving.

Mr. Thomas E. Porter of New York city, gave nine volumes of rural affairs, and a few other books, and the majority of the remaining volumes by which the library was increased during the year were contributed by various friends of the school, while a few were purchased by money from our library fund.

#### GIFTS TO THE SCHOOL.

Mr. C. H. Beach of Hartford, gave a two-years-old thoroughbred Guernsey bull. The Barnes Manufacturing Company of New Haven, a number of locks for the boys' rooms. Mr. E. L. French of Central Village, a "Little Giant" root, bog, and stone puller. Rev. J. T. Pettee of Meriden, a telescope. Marks Bros. of Church street, Hartford, a quantity of pineapples and oranges. Mr. J. B. Olcott of South Manchester, several frames with mounted specimens of grasses.

The following list of papers is contributed by the publishers and other friends, for the boys' reading room: *The Connecticut Courant*, *The Connecticut Farmer*, *Willimantic Journal*, *Willimantic Chronicle*, *American Agriculturist*, *The Rural New Yorker*, *Farmer's Advocate*, *New England Farmer*, *Coöperative Poultry Post*, *The Religious Herald*, *Massachusetts Ploughman*, *Illustrated Christian Weekly*, *Gleanings in Bee Culture*, *New York Semi-Weekly Tribune*, and *American Grange Bulletin*.

#### PUBLIC LECTURES.

In conformity to our custom of the former year, we arranged a course of lectures on general topics, occurring on alternate Friday nights, and extending through the winter and spring. They were always open to the public, and these gentlemen all gave their services to the school. The following is the list of lecturers, with their subjects, given in the order in which they occurred:

Rev. S. R. Free, Willimantic; The Word of God.

Mr. S. Cables, Thomaston; My Experience upon the Farm.

Rev. Beverly E. Warner, Stratford; How and What to Read, and Why.

Sec. T. S. Gold, West Cornwall; The New Orleans Exposition.

Prof. H. H. Goodell, Amherst, Mass.; The Ancient Guilds of England.

Dr. F. E. Rice, D.V. S., Hartford; Facts which Ought to be Known by Every Stock-owner.

Rev. J. P. Hawley, Stafford Springs; Trip to Colorado and the West.

Prof. Manly Miles, Amherst, Mass.; Life on the Farm, and Breeds of Cattle; illustrated.

Mr. J. B. Olcott, South Manchester; Grasses.

Prof. L. Pratt, Hartford; Methods of Teaching Deaf Mutes.

Hon. Mortimer Whitehead, New Jersey; The Grange.

The Home Circle Orchestra of North Coventry and Mansfield, Mr. W. C. Lee, leader, gave one concert in the course; also furnished a part of the music at our commencement exercises.

Besides these lectures in the general course, Dr. W. D. Critcherson, D.V. S., of Norwich, kindly gave his services, in a course of six lectures, to the students of the school and the farmers of the vicinity, on various topics connected with veterinary science.

## CATALOGUE OF STUDENTS FOR THE YEAR 1885.

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### CLASS OF 1885.

Robert A. Ayer,	Saybrook, Middlesex Co.,	Conn.
Horace S. Eaton,	Chaplin, Windham Co.,	"
Archer C. Ford,	Romford, Litchfield Co.,	"
Frank E. Fenner,	Gurleyville, Tolland Co.,	"
Royal E. Meyers,	Litchfield, Litchfield Co.,	"
Isaac B. Wakeman,	Saugatuck, Fairfield Co.,	"

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### CLASS OF 1886.

John H. Atkins,	Middletown, Middlesex Co.,	Conn.
Eugene A. Bailey,	Middlefield, Middlesex Co.,	"
Edgar S. Blair,	East Windsor Hill, Hartford Co.,	"
Will. L. Chamberlain,	Mansfield, Tolland Co.,	"
Fred. S. Coe,	Middlefield, Middlesex Co.,	"
John H. Gardiner, Jr.,	Taftville, New London Co.,	"
Selden W. Hayes,	Granby, Hartford Co.,	"
Bruce Hough,	Weatogue, Hartford Co.,	"
Henry R. Hayden, Jr.,	East Hartford, Hartford Co.,	"
Edgar J. Leavenworth,	Redding Center, Fairfield Co.,	"
John B. Perry,	Clark's Falls, New London Co.,	"
Arthur L. Reed,	Rockville, Tolland Co.,	"
Fred. A. Robinson,	Glastonbury, Hartford Co.,	"
Ira B. Smith,	Hartford, Hartford Co.,	"

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### CLASS OF 1887.

Elijah S. Abel,	Bozrahville, New London Co.,	Conn.
Fred. W. Barnes,	Windsor, Hartford Co.,	"
James E. Birge,	Torrington, Litchfield Co.,	"
Wm. H. Doyle,	Meriden, New Haven Co.,	"
Fred. Farwell,	Mansfield, Tolland Co.,	"

Fred. A. Gallup,	Norwich, New London Co.,	Conn.
Dexter E. Hall,	Meriden, New Haven Co.,	"
Wm. J. Irwin,	Middletown, Middlesex Co.,	"
Wm. S. Lee,	Hanover, New London Co.,	"
John H. Merrill,	Niantic, New London Co.,	"
John E. Perry,	Oxford, Fairfield Co.,	"
Sidney H. Perry,	Clark's Falls, New London Co.,	"
Eckly R. Storrs,	Spring Hill, Tolland Co.,	"
Albert E. Sumner,	Eastford, Windham Co.,	"
E. F. Weed,	So. Norwalk, Fairfield Co.,	"
J. W. Yeomans,	Mansfield Center, Tolland Co.,	"

Whole number of students present during the year, 36.

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## CALENDAR.

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Winter Term begins, - - -	January 4, 1886.
Term Examinations, - - -	March 23-26, 1886.
Spring Vacation, - - -	March 27 to April 5, 1886.
Spring Term begins, - - -	April 5, 1886.
Annual Examinations, - - -	June 10-17, 1886.
Fifth Annual Commencement, -	June 18, 1886.
Fall Term begins, - - -	September 22, 1886.

Address all communications to

STORRS AGRICULTURAL SCHOOL,

MANSFIELD, CONN.



## TREASURER'S REPORT.

J. P. BARSTOW, *Treasurer,*

*In account with* STORRS AGRICULTURAL SCHOOL.

1885.	Dr.	
Jan. 1.	Cash on hand, - - - - -	\$38.77
	“ Prof. Koons (board and tuition), -	637.72
Feb. 17.	“ for note given to raise money to pay provision bills, - - - - -	297.30
March 2.	“ board and Prof. Koons' expense Leg. Com., - - - - -	49.66
April 2.	“ Comptroller, - - - - -	1,250.00
	“ board and tuition, - - - - -	604.24
May 19.	“ sundries, - - - - -	34.00
“ 31.	“ for note as above, - - - - -	148.43
	“ board and tuition, - - - - -	23.44
June 30.	“ Comptroller, - - - - -	1,250.00
	“ “ - - - - -	1,200.00
	“ pig sold, - - - - -	36.00
	“ board and tuition, - - - - -	379.66
		<u>\$5,949.22</u>

1885.	Cr.	
Jan. 1.	Paid salaries due Dec. 31, 1884, - - -	\$911.72
	“ “ from January to July, 1885, -	1,565.34
	“ provisions, - - - - -	1,465.19
	“ repairs farm buildings, - - - - -	226.25
	“ seeds, fertilizers, feed for stock, farm labor, - - - - -	566.34
	“ farm and laboratory instruments and tools, - - - - -	137.96
	“ school and laboratory supplies, - -	316.57
	“ sundries, - - - - -	302.21
	“ “ paid bank notes, - - - - -	450.00
	Balance to new account, - - - - -	7.64
		<u>\$5,949.22</u>



This will certify that we have examined the foregoing account of J. P. Barstow, Treasurer of the Storrs Agricultural School, compared the vouchers therewith and find the same correct, showing a balance in the hands of the Treasurer amounting to seven dollars and sixty-four cents (\$7.64).

GEORGE M. GUNN, } *Auditors*  
THOMAS A. LAKE, } *Public Accounts.*

HARTFORD, Sept. 2, 1885.







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ANNUAL REPORT  
OF THE  
TRUSTEES  
OF THE  
STORRS AGRICULTURAL SCHOOL  
AT  
MANSFIELD, CONN.  
P. O., STORRS, CONN.)  
1890.

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PRINTED BY ORDER OF THE GENERAL ASSEMBLY.

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HARTFORD, CONN.:  
PRESS OF THE CASE, LOCKWOOD & BRAINARD COMPANY.  
1891.





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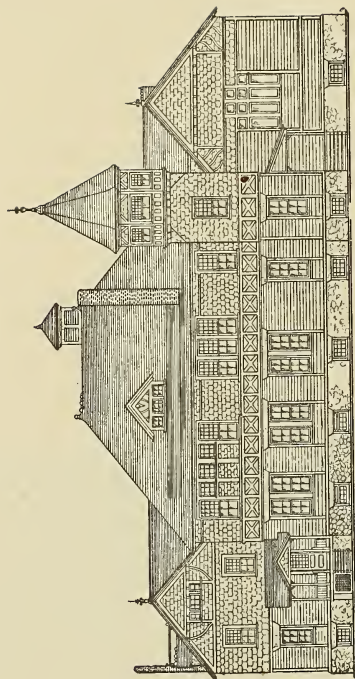
B. F. Koons,

Principal

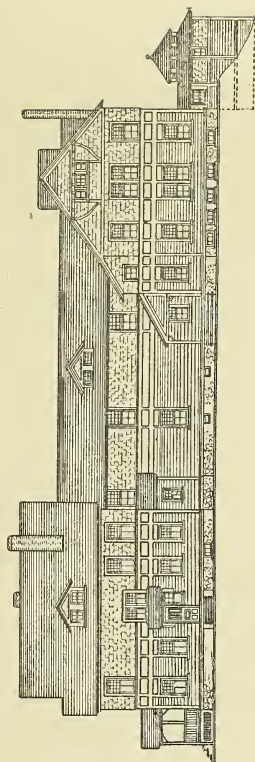
CONNECTICUT AGRICULTURAL SCHOOL,

MANSFIELD, CONN.

PLEASE EXCHANGE.



MAIN BUILDING, STORRS SCHOOL, ERECTED 1890.



DORMITORY, ERECTED 1890.



# ANNUAL REPORT

OF THE

## TRUSTEES

OF THE

# STORRS AGRICULTURAL SCHOOL

AT

MANSFIELD, CONN.

P. O., STORRS, CONN.)

1890.

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PRESS OF THE CASE, LOCKWOOD & BRAINARD COMPANY.

1891.

## TRUSTEES.

	Term Expires
HIS EXCELLENCY MORGAN G. BULKELEY, <i>President,</i>	
E. H. HYDE, <i>STAFFORD, Vice-President.</i>	
<i>Appointed by the Board of Agriculture.</i>	
T. S. GOLD,	W. CORNWALL, <i>Secretary,</i> 1893
HENRY C. MILES,	MILFORD, <i>Treasurer,</i> 1891
WM. E. SIMONDS,	CANTON, } <i>Auditors,</i> 1893
WM. B. SPRAGUE,	ANDOVER, } 1891
J. M. HUBBARD,	MIDDLETOWN, 1893
J. H. HALE,	SOUTH GLASTONBURY, 1891
PROF. S. W. JOHNSON,	NEW HAVEN, <i>Ex officio, Director</i> <i>of the Connecticut Experiment</i> <i>Station.</i>

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## OFFICERS OF THE SCHOOL.

B. F. KOONS, <i>Principal.</i>
J. R. HUTTON, B.S.A., <i>Professor of Chemistry and Physics.</i>
L. P. CHAMBERLAIN, <i>Professor of Agriculture and Farm Superin-</i> <i>tendent.</i>
C. S. PHELPS, B.S., <i>Associate Professor of Agriculture.</i>
MISS JOSEPHINE NETTLETON, <i>Instructor in Mathematics, English,</i> <i>and Physical Geography.</i>
MRS. C. E. HILLIARD, <i>Matron.</i>



# State of Connecticut.

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## REPORT.

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*To His Excellency, the Governor of Connecticut :*

As Secretary of the Board I have the honor, in behalf of the Trustees, to present to you the Annual Report of the Storrs' Agricultural School, for the year 1890.

It contains an official list, report of the principal, embracing calendar, catalogue, prospectus, course of instruction, list of text-books, commencement exercises, alumni association, winter course of lectures, reading-room, library, inventory, labor of students, school expenses, boarding department, inventory of live stock and tools, farm and garden products, and permanent improvements.

The work of each department is more fully set forth by those in special charge. The report of the treasurer gives the financial condition of the institution.

The principal feature in the year's history of the school is the erection of the new school buildings.

The General Assembly of 1889 appropriated the sum of fifty thousand dollars for the erection of two buildings, in accordance with a general plan adopted. A school building for lecture-rooms, library, laboratories, dining-hall, with rooms for matron and her assistants, and a dormitory with thirty rooms for students, and rooms for the principal and family. Each room is for a single student, and has a closet, and is neatly furnished with good, solid oak furniture, and a carpet. It was expected that this building would be ready for occupancy at the opening of the fall term, but circumstances beyond our control, and for which no blame is attached to the contractor, Watson H. Bliss, prevented its use

till about the 1st of December. The main building is now nearly completed, but will not be occupied till spring.

The laboratories and lecture-rooms are planned to accommodate fifty students in the institution, and another dormitory will be needed for them. In providing for this, additional land was required, which was given by Mr. Augustus Storrs — a field of about two acres, his fruit and vegetable garden — bringing to a severe test the generosity of the original founders of the school. This will give room enough to complete the row of buildings according to the present design.

Your building committee expect to complete the two buildings within the appropriation, but an additional sum will be required to furnish them and provide a water supply.

The uncertainty of always having an abundance of water from the present source, induced the trustees to contract for a bored well, 6 inches in diameter, and to supply 15 gallons per minute. A depth of 350 feet has been reached, with only an insufficient supply of water. The work of drilling the solid rock is still in progress, in hopes, by both parties to the contract, of soon striking an abundant supply of water.

At the opening of the fall term our accommodations were crowded, till we gained relief by the occupancy of the new building. We have reason to expect at the opening of the next year, our present enlarged capacity, still retaining the old school building, will be fully occupied.

The growth of the school as its capacity increases is very encouraging to the Trustees. Its plan is new: that of taking young men right from the common schools of the State, and giving them an education for the farm, practical, in the garden and field, while the true methods of scientific research and so much knowledge of the sciences that pertain to agriculture as can be given in a three-years course, are taught in the class rooms and laboratories.

The Experiment Station, with its forage garden, testing of fertilizers, and feeding experiments, furnishes object-lessons for daily study. Strange, but true, a lamentable ignorance exists of the grasses, plants that form the basis of all

successful agriculture — ignorance and confusion not only in regard to their names, but character, qualities, uses, and seed, not only among farmers, who see and work with them every day of their lives, but among seedsmen; while science has left more here of more immediate importance to be developed than in any other branch of the visible world of nature. The forage garden not only shows these things as they are, for study and comparison, but, properly utilized, will sharpen habits of observation, not only as to their individual characters, but also in regard to all objects in the world around us.

These habits of close observation, so necessary to the successful gardener and farmer, are of slow growth, but, once established, become not only a source of pleasure, but open a mine of wealth to the cultivator of the soil, in a pecuniary sense, and in developing the man; for the difference between one man and another is largely in the use of the powers common to humanity.

For the full work of the station reference is made to the Report of the Director, published elsewhere.

In view of the present needs and prospects of intelligent agriculture, we congratulate the citizens of Connecticut upon the successful development of the Storrs' Agricultural School, and confidently rely upon them for that moral and material support necessary to its maintenance and prosperity.

T. S. GOLD, *Secretary*.

December 1, 1890.

*To the Board of Trustees:*

I have the honor to transmit to you the report of the Storrs' School, for the year ending Nov. 30, 1890.

I am, very respectfully, your obedient servant,

B. F. KOONS.

## CALENDAR.

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1890.

Winter Term began January 6th. Spring vacation, March 29th to April 6th. Ninth Annual Commencement, June 20th. Fall Term began September 22d. Christmas vacation, December 19th to January 4, 1891.

1891.

Winter Term begins January 5th. Spring vacation, March 28th to April 5th. Spring term begins April 6. Tenth Annual Commencement, June 19th. Fall Term begins September 21st. Christmas vacation, December 19th to January 3d, 1892.

## CATALOGUE OF STUDENTS FOR THE YEAR 1890.

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Charles George Allyn,	Hebron, Tolland Co.
Herbert Lockaman Andrews,	Deep River, Middlesex Co.
Edmund Sylvanus Backus,	Andover, Tolland Co.
Albion Maurice Baker,	Andover, Tolland Co.
Frederick Otis Barrows,	Mansfield, Tolland Co.
Ernst Hamilton Brandt,	Manchester, Hartford Co.
Merrill Everett Brown,	Coventry, Tolland Co.
Seth Herbert Buell,	Plymouth, Litchfield Co.
Fred. Alroy Bugbee,	Willimantic, Windham Co.
Herbert Porch Cadwell,	Hartford, Hartford Co.
Charles Vibert Chandler,	South Windsor, Hartford Co.
Walter Ernest Cummings,	Spring Hill, Tolland Co.
James Joseph Daley,	Mansfield, Tolland Co.
Aaron William Fenn,	Plymouth, Litchfield Co.
James Sumner Fowler,	Pomfret Center, Windham Co.
Henry Edward French,	Hartford, Hartford Co.
John Carter Frisbie,	Southington, Hartford Co.
George Stuart Gadbois,	Norwich, New London Co.
Charles James Gilmore,	Hartford, Hartford Co.
Wilbur Lionel Goodenough,	Burrville, Litchfield Co.
Alfred Herbert Griswold,	New Britain, Hartford Co.
John Joseph Guilford,	West Winsted, Litchfield Co.
Charles Thomas Guilford,	West Winsted, Litchfield Co.
Arthur Gilbert Hall,	Meriden, New Haven Co.
George Henry Hall, Jr.,	Manchester, Hartford Co.
Warren Wedge Hobby,	Mansfield, Tolland Co.
Walter Holden,	Norwich, New London Co.
Charles Ephraim Hopkins,	Plainfield, Windham Co.
Latham Hull,	No. Stonington, New London Co.
Charles Richard Jewett,	Bridgeport, Fairfield Co.
Herbert Newton Johnson,	Waterbury, New Haven Co.
Carlton Elbert Lane,	Killingworth, Middlesex Co.

Clarence Bronson Lane,	Killingworth, Middlesex Co.
Timothy Albert Mack,	Andover, Tolland Co.
Harry Grant Manchester,	West Winsted, Litchfield Co.
George Henry Merwin,	Westport, Fairfield Co.
George Neth,	Winchester Center, Litchfield Co.
Theodore Olsen,	Avon, Hartford Co.
Martin Hibbard Parker,	South Coventry, Tolland Co.
Charles Backus Pomeroy, Jr.,	Willimantic, Windham Co.
Fred Rosebrooks,	Mansfield, Tolland Co.
Walter Lyman Rosebrooks,	Mansfield, Tolland Co.
Walter Francis Schults,	Hartford, Hartford Co.
Robert Garland Shephard,	South Manchester, Hartford Co.
George Orlando Smith,	South Willington, Tolland Co.
Adolph Carl Sternberg,	West Hartford, Hartford Co.
Charles Herbert Vibert,	Meriden, New Haven Co.
John Hunter Weems,	West Cornwall, Litchfield Co.
Willis LeRoy Wetmore,	Winchester, Litchfield Co.
Herbert Edmund Warner,	East Haven, New Haven Co.
Allen Rice Yale,	Meriden, New Haven Co.

Whole number of students 51. Whole number of students receiving instruction in the school since its organization, 160. Number of graduates, 64.



# PROSPECTUS.

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## LOCATION.

The school derives its name from the donors of the original property, the brothers Augustus and Charles Storrs, of Brooklyn, N. Y., and is situated in the town of Mansfield, Tolland County, one of the most healthful regions of the State, and its railroad, express, and freight station is Eagleville, on the New London Northern road, eight miles north of Willimantic. Telegraph office at Willimantic, telephone connections at the school.

Section 1 of the Act of the General Assembly establishing the school reads as follows: "The Storrs' Agricultural School is hereby established for the education of boys whose parents are citizens of this State, in such branches of scientific knowledge as shall tend to increase their proficiency in the business of Agriculture."

## COURSE OF STUDY.

As stated above, the object of the school is to teach Practical and Scientific Agriculture and Horticulture, yet as subservient and necessary to this purpose, various other branches are taught, especial prominence being given to those most necessary for the successful prosecution of Agriculture.

The course of study requires three years of three terms each, each year aggregating 36 weeks. The length of the course has been changed from two to three years, but those who are able to pass a satisfactory examination will be allowed to complete it in two years. For the arrangement of the terms and vacations see the calendar. Students receive instruction both in the class-room and upon the farm.

In the class-room they study those branches of natural science, and only those, which have a directly useful bearing upon New England farming, and the in-door work is made to harmonize with that upon the farm and in the garden. The branches pursued are General and Agricultural Chemistry, Natural Philosophy, Farm Mechanics, Elementary Geometry, Land Surveying, Botany, Zoölogy, which includes, especially, domestic animals and insects

injurious to the crops of the farm and garden; Geology, Human and Animal Physiology, Agriculture, Farm Accounts, Stock Breeding, Milk Production, Arithmetic, and English; taking up first the general principles of these sciences, and afterwards their special application to Practical Agriculture.

On the farm they are taught the practical applications of the principles learned in the class-room to every kind of farm work, so that each boy may become skillful in the management of a farm; and that this may be accomplished, the ordinary chores of the farm, the proper care of all kinds of stock, milking, driving of oxen and horses, and the farm work in general are so arranged, and each student assigned some portion, and changes of work often made, that every boy while a member of the school may have an opportunity to learn how to do all kinds of farm and garden work in the best manner.

#### FACILITIES FOR INSTRUCTION.

The school possesses a farm of 170 acres, well suited to the purposes of instruction, and apparatus to illustrate the most important facts of chemistry and physics, also is supplied with compound and dissecting microscopes, both mounted and unmounted skeletons of the domestic animals, and a collection of insects injurious to farm and garden crops. The cabinet contains a reasonable representation of the rocks, ores, and minerals of the State, and the library of over 1,500 standard books of reference, scientific, agricultural, and miscellaneous, is at all times accessible to the students, and in addition to these the recent organization of the Hatch Experiment Station, in connection with the school, may be regarded as a very important adjunct, adding much to the educating influences among which the students live while members of the school. The new school and dormitory buildings, now in process of erection, will be ready for occupancy during the year, and will add much to the facilities of the school and comfort of the students. In the new dormitory each pupil has a room to himself, supplied with chairs, table, furnished bed, and carpet.

#### REQUIREMENTS FOR ADMISSION.

According to the Act of Incorporation, the School is for "The education of boys whose parents are citizens of the State," and under the present regulations, is *not* permitted to receive pupils

from without the State. Applicants must be at least fifteen years of age, and must furnish a certificate of good moral character from a clergyman or a member of the Board of School Visitors of the town where they reside. They must be able to read and write ordinary English correctly and intelligently, and must be familiar with simple arithmetic, and have a fair knowledge of geography and United States history. No pupils will be received into the classes after the beginning of the school year, except those who can sustain a satisfactory examination in all the studies which have been pursued by the class they wish to join.

New classes are not formed at any other time than the beginning of the school year, which is at the opening of the fall term in September; hence, those who contemplate entering the school would do well to make application at least as early as September 1st, and present themselves for the entering examination at the proper time.

#### DEPORTMENT.

Every pupil on becoming a member of the school thereby pledges his obedience to its rules, and to a diligent performance of his duties. Students are expected at all times to demean themselves in a quiet and gentlemanly manner, and no pupil will be allowed to remain in the school, who, by misconduct or indolence, shows himself unworthy of its benefits. The regulations require all pupils to attend church and Sunday-school once each Sunday, unless previously excused,

The Congregational Church, that being nearest the school, is selected as the place of attendance, unless by written request of parent or guardian they are permitted to attend regularly elsewhere.

#### SPECIAL STUDIES.

Young men, suitably qualified, may be received into the school after due examination, as Special Students, to pursue a part of the studies of the regular course, on condition that their time shall be fully and profitably occupied.

#### DIPLOMAS.

Students who have completed the full course of study, and have maintained a fair standing in deportment, study, and work, will receive a diploma of graduation.

## EXPENSES.

By the liberality of the State the Trustees are enabled to offer first-class instruction at the low rate of \$10.00 per term, or \$25.00 per year; \$10.00 payable at the opening of the first and second terms each, and \$5.00 at the opening of the third: arrangements are made for remitting this charge in worthy cases, making tuition free to those not able to pay it.

No charge is made for furnished rooms. Table board is furnished at cost. At the end of each quarter, the expenses of the boarding department for the term are divided among the whole number present, and the price averages about \$2.50 per week.

Text-books, fuel, lights, and washing, are furnished at cost also. Students should provide themselves with an ample supply of towels, and these, together with all handkerchiefs and wearing apparel, should have the owner's name plainly marked upon them, so as to guard against loss.

Individual records of labor, other than that performed for the purposes of instruction, will be kept, and reasonable compensation allowed for it.

## SELF-HELP.

Extra labor, as far as practicable, will be furnished to all those who desire it towards self-support, when it can be performed without interference with regular duties, and industrious pupils can do much towards paying their expenses; sometimes a few earn nearly enough to pay the whole of them.

## HOURS OF LABOR AND STUDY.

During the fall and winter term, when the necessities of the farm demand it, and the weather permits, the students are required to spend three hours daily upon the farm, and six or more upon study, laboratory work, and recitations, a part going upon the farm in the forenoon and the others in the afternoon; and during the spring term, five hours a day may be required upon the farm, when there is special need of that amount of work, and five or more in school work.

Under the direction of the farm Superintendent, the students do all kinds of farm work, including care of stock, milking, and general chores.

Address all inquiries or communications to STORRS' AGRICULTURAL SCHOOL, Storrs, Conn.

## COURSE OF INSTRUCTION.

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### JUNIOR CLASS.

Chemistry, Physical Geography, Arithmetic, English.	}	Continued through the year.
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### MIDDLE CLASS.

Fall Term.	Winter Term.	Spring Term.
Chemistry,	Botany,	Chemistry,
Agriculture,	Chemistry,	Zoölogy,
Human Physiology,	Agriculture,	Book-Keeping,
Anatomy of Domes- } tic Animals,	Physics,	Algebra,
Dairying,	Zoölogy,	Botany,
Physics,	Algebra,	Physics,
English.	English.	English.

### SENIOR CLASS.

Fall Term.	Winter Term.	Spring Term.
Stock Breeding,	Agriculture,	Geology,
Entomology,	Cattle Feeding,	Chemistry,
Chemistry,	Chemistry,	Land Surveying,
Botany,	Geometry,	Botany,
Geometry,	Zoölogy,	{ Science of Govern- ment and Politi- cal Economy,
English.	English.	English.



## LIST OF TEXT-BOOKS USED.

Johnson's How Crops Grow.  
 Armsby's Cattle Feeding.  
 Miles' Stock-Breeding.  
 Shepard's Inorganic Chemistry.  
 Remsen's Organic Chemistry.  
 Stoddard's Qualitative Chemistry.  
 Muter's Quantitative Chemistry.  
 Martin's Human Body.  
 Gray's Lessons and Manual of Botany.  
 Dana's Text-Book of Geology.  
 Steele's Physics.  
 Bradbury's Arithmetic.  
 Wentworth's Algebra.  
 Wentworth's Geometry.  
 Wentworth's Trigonometry.  
 Wentworth's Surveying.  
 Hyde's Lessons in English.  
 Whitney's Essentials of English.  
 Chittenden's Composition.

No changes have been made in our corps of instructors during the year, and the work has progressed without any radical modifications of the course of study and instruction reported at the close of 1889.

The Annual Commencement was held in June, at the close of the school year, when the following programme was presented by the graduating class of thirteen young men :

## COMMENCEMENT EXERCISES, JUNE 20TH.

## INVOCATION.

*Music.*

E. H. BRANDT,	-	-	-	-	-	Manchester
	"Our Agricultural Institutions."					
M. E. BROWN,	-	-	-	-	-	Coventry
	"The Farmer and the Grange."					
C. J. GILMORE,	-	-	-	-	-	Hartford
	"Profit on the Farm."					



W. L. GOODENOUGH,	-	-	-	-	Burrville
"An Ideal Farmer."					
L. Hull,	-	-	-	-	North Stonington
"What Breeding Has Done for the American Trotter."					
<i>Music.</i>					
C. B. LANE,	-	-	-	-	Killingworth
"Dairying."					
C. E. LANE,	-	-	-	-	Killingworth
"Irrigation and Drainage."					
GEORGE NETH,	-	-	-	-	Winchester Center
"The Sources of Plant Food."					
C. B. POMEROY, JR.,	-	-	-	-	Willimantic
"The West or New England, Which ?					
R. G. SHEPARD,	-	-	-	-	South Manchester
"Origin and Classification of Soils."					
A. C. STERNBERG,	-	-	-	-	West Hartford
"Theory and Practice."					
J. H. WEEMS,	-	-	-	-	West Cornwall
"Looking Backward Upon New England Agriculture. 1990 — 1890."					
W. L. WETMORE,	-	-	-	-	Winchester
"Siloes and Silage."					

*Music.*

Addresses — State Master George Austin Bowen, Professor W. O. Atwater, Mr. J. H. Hale.  
 Awarding of Prizes.  
 Conferring of Diplomas.

Prizes, twenty-six dollars in gold : the 1st \$15.00, 2d \$8.00, and 3d \$3.00, were given by the Connecticut Dairymen's Association for the best essays upon "Breeds and Breeding of Dairy Stock," and an oral examination upon the general subject of Agriculture.

Clarence B. Lane won the 1st prize, Latham Hull 2d, A. C. Sternberg, Jr., 3d.

We hope that the Dairymen's Association will feel disposed to make this an annual offer to the students.

The graduates of the school offer for next year a prize of ten dollars to the student of the graduating class passing the

best examination upon *Practical Agriculture*, the examining committee to be chosen by the graduates from among their own number.

#### THE ALUMNI ASSOCIATION.

All the graduates of the school, now numbering 64, are eligible to membership, and the annual meeting is held on Commencement Day at the school. The object of the association is to cultivate fraternal relations, and for mutual improvement; also to work for the highest interests of the school. The present officers of the association are:

DR. ANDREW HYDE, President,  
J. H. GARDNER, JR., Secretary,  
M. CHAPMAN, Treasurer.

#### THE WINTER COURSE OF LECTURES.

That the students might get the benefit of conducting the correspondence and the business management of the course, the organization and control of the winter series of lectures was turned over to them, they, upon conference with the principal, engaging the lecturers and assuming the responsibility, which resulted in the following course of lectures:

Jan. 31st. Ornithology, by Rev. C. M. Jones of Eastford.

Feb. 14th. The Paris Exhibition, Principal J. H. Washburn of Kingston, R. I.

Feb. 21st. What Shall I Do with Life? (Free Trade), Mr. J. L. Cowles of Farmington.

March 14th. Outs and Ins of Edinburgh, Rev. N. S. Moore of Storrs.

March 21st. Protection, Mr. J. M. Hubbard of Middletown.

#### READING-ROOM.

The reading-room is supplied with a considerable number of the leading agricultural papers of the United States, besides the most important daily and weekly papers of the State; almost exclusively the gift of the publishers.

## THE LIBRARY

Now contains over 1,600 books and pamphlets, acquired by gift and purchase. With new accommodations it can be much enlarged with advantage. More books for reference in the various lines of study are needed. If not furnished by the State may we not hope that some liberal-minded persons will supply our want.

## INVENTORY.

Office,	-	-	-	-	-	-	-	-	-	\$18.00
Library,	-	-	-	-	-	-	-	-	-	1,250.00
Physical and chemical apparatus and chemicals,	-									1,200.00
Natural history outfit,	-	-	-	-	-	-	-	-	-	150.00
Household furniture and outfit,	-	-	-	-	-	-	-	-	-	2,200.00
Kitchen	"	"	"	-	-	-	-	-	-	275.00
Provisions on hand,	-	-	-	-	-	-	-	-	-	141.60
Tons of coal, 6.										

## LABOR OF STUDENTS.

Permanent improvements on the farm, 1,948 $\frac{3}{4}$ hours,										
@ 8c. per hour,	-	-	-	-	-	-	-	-	-	\$155.90
General farm work, 11,716 $\frac{3}{8}$ hours, @ 8c.,	-	-								937.31
For the school, 748 $\frac{1}{2}$ hours, @ 8c.,	-	-	-	-	-	-	-	-	-	59.88
For the boarding department, 2,168 hours, @ 8c.,	-									173.50
For the ex. station, 2,315 $\frac{1}{4}$ hours, @ 8c.,	-	-	-	-	-	-	-	-	-	185.22
Total amount earned by the students at all kinds of labor during the year,	-	-	-	-	-	-	-	-	-	1,511.81

## SCHOOL EXPENSES.

Text-books,	-	-	-	-	-	-	-	-	-	\$360.72
Books for library, and stationery,	-	-	-	-	-	-	-	-	-	61.53
Printing,	-	-	-	-	-	-	-	-	-	115.30
Chemicals,	-	-	-	-	-	-	-	-	-	12.92
Other supplies,	-	-	-	-	-	-	-	-	-	76.68
Repairs on buildings,	-	-	-	-	-	-	-	-	-	5.54
Student labor,	-	-	-	-	-	-	-	-	-	59.88

## GENERAL.

Postage, - - - - -	46.28
Telephone, - - - - -	34.94
Water rent, - - - - -	10.00
Freight and express, - - - - -	164.16
Rent of church slips for students, - - - - -	15.00
Traveling expenses, - - - - -	66.26

## BOARDING DEPARTMENT.

Provisions,	{	Beef and pork purchased,	-	-			\$354.80
		Fish and oysters,	-	-	-	-	98.27
		Flour,	-	-	-	-	203.20
		All other,	-	-	-	-	1,017.35
Fuel and lights,	-	-	-	-	-	-	66.72
Dormitory and kitchen outfit,	-	-	-	-	-	-	302.13
Other purchases,	-	-	-	-	-	-	21.11
Repair of buildings,	-	-	-	-	-	-	31.86
Servant hire,	-	-	-	-	-	-	728.68
Matron,	-	-	-	-	-	-	400.00

## LIVE STOCK ON THE FARM NOV. 30, 1890.

## CATTLE.

2 pairs of working oxen, - - - - -	\$225.00
12 grade cows, - - - - -	360.00
2 thoroughbred Guernsey cows, - - - - -	200.00
8 half-blood Guernsey heifers, 2 years, - - - - -	160.00
4 half-blood Guernsey heifers, 1 year, - - - - -	60.00
1 half-blood Guernsey heifer calf, - - - - -	12.00
1 thoroughbred Guernsey bull calf, - - - - -	20.00

## HORSES.

1 pair of farm-horses, 8 years old, - - - - -	400.00
2 carriage horses, - - - - -	150.00

## SWINE.

1 fat hog, - - - - -	23.40
4 Berkshire breeding sows, - - - - -	60.00

## POULTRY.

20 Plymouth Rock fowls, - - - - -	10.00
<hr/>	
	\$1,680.40

## FARM IMPLEMENTS ON HAND NOV. 30, 1890.

Aggregate valuation, - - - - -	\$715.00
Quarry, joiner's, and all other tools, - - -	60.00
	<hr/>
	\$775.00

## AMOUNT AND VALUE OF FARM AND GARDEN PRODUCTS.

55 tons of upland hay, - - - - -	\$550.00
5 tons of rowen hay, - - - - -	60.00
12 tons of swamp hay, - - - - -	72.00
6 tons of bedding hay, - - - - -	24.00
1½ tons of straw, - - - - -	15.00
1 ton of corn stover, - - - - -	8.00
65 tons of ensilage, - - - - -	162.50
½ ton of squashes, - - - - -	15.00
1 ton of beets, carrots, and turnips, - - -	10.00
530 bushels of ears of field corn, - - - -	159.00
75 bushels of ears of sweet corn, - - - -	15.00
15 bushels of rye, - - - - -	9.00
23 bushels of oats, - - - - -	11.50
134 bushels of potatoes, - - - - -	80.40
15 bushels of parsnips, - - - - -	7.50
5 bushels of table beets, - - - - -	2.50
5 bushels of onions, - - - - -	3.75
6 bushels of White Rock turnips, - - - -	1.50
15 bushels of tomatoes, - - - - -	15.00
5 bushels of cucumbers, - - - - -	3.00
5 bushels of pole beans, - - - - -	3.75
10 bushels of peas, - - - - -	10.00
9 bushels of apples, - - - - -	6.00
3 bushels of pears, - - - - -	3.00
700 heads of celery, - - - - -	21.00
200 cabbages, - - - - -	12.00
peppers, - - - - -	2.00
200 heads of lettuce, - - - - -	4.00
rhubarb and other vegetables, - - - -	5.00
141 quarts of strawberries, - - - - -	21.15
113 quarts of raspberries, - - - - -	13.56
4,985 gallons of milk, - - - - -	598.20
2,183 pounds of pork, - - - - -	133.67

3,218 pounds of beef,	-	-	-	-	-	\$141.42
138 pounds of veal,	-	-	-	-	-	6.21
75 pounds of poultry,	-	-	-	-	-	11.25
2 calves raised,	-	-	-	-	-	32.00
98 dozen of eggs,	-	-	-	-	-	19.60
49 cords of wood,	-	-	-	-	-	171.50
						<hr/>
						\$2,439.96

## LABOR ON PERMANENT IMPROVEMENTS.

## REMOVING ROCKS FROM LANDS ON HILL.

Labor of men, 278 hours,	-	-	-	-	-	\$55.60
Labor of students, 1,566 hours,	-	-	-	-	-	125.28
Labor of teams, 372 hours,	-	-	-	-	-	74.40
						<hr/>
						\$255.28

## GRADING FOR NEW FARM SHED.

Labor of students, 78 hours,	-	-	-	-	-	\$6.24
Labor of men, 24 hours,	-	-	-	-	-	4.80
Labor of teams, 17 hours,	-	-	-	-	-	3.40
						<hr/>
						\$14.44

## GRADING HIGHWAY.

Students, 28½ hours,	-	-	-	-	-	\$2.28
Man, 7½ hours,	-	-	-	-	-	1.50
Teams, 10 hours,	-	-	-	-	-	2.00
						<hr/>
						\$5.78

## EXCAVATING FOR AND GRADING ABOUT NEW PIGGERY.

Labor of students, 73 hours,	-	-	-	-	-	\$5.84
Labor of man, 34 hours,	-	-	-	-	-	6.80
Labor of teams, 35 hours,	-	-	-	-	-	7.00
						<hr/>
						\$19.64

## LABOR ON DAM FOR ARTIFICIAL POND.

Labor of students, 57 hours,	-	-	-	-	-	\$4.56
Labor of man, 19 hours,	-	-	-	-	-	3.80
Labor of teams, 39 hours,	-	-	-	-	-	7.80
						<hr/>
						\$16.16

Building cellar for storing celery,	-	-	-	-	-	\$8.48
Building driveway near farm barn,	-	-	-	-	-	9.72
Removing rocks from roadside,	-	-	-	-	-	4.24
Removing apple trees from mowing lands,	-	-	-	-	-	7.66
						<hr/>
Total of labor on permanent improvements,	-	-	-	-	-	\$341.40



## REPORT OF PROFESSOR CHAMBERLAIN.

*To the Trustees of the Storrs Agricultural School:*

GENTLEMEN, — By your requirement it becomes my duty to submit this, my seventh annual report of the farm. Beyond the details furnished for your information by the accompanying tables, showing the kind and amount of crops grown, the value of each, the number and value of live stock, and the cost of such improvements as have been made during the year, little needs to be stated. The influences that have resulted in such an abundant yield of hay, or in such a scanty yield of oats, throughout New England, have been as marked here as elsewhere.

I wish, however to direct your attention to the fact that the per cent. of increase in our hay crop has been steady from year to year, showing that improved cultivation rather than climatic conditions must be relied upon in the production of this most essential crop. Quite an area of oats was sown, where all the conditions seemed to favor a large yield, but the universal blight was so severe that most of this crop was ensilaged, and used to supplement the pasture feed in the late summer months. Nearly an acre of winter wheat, sown to test its adaptation to our soil, suffered quite as much from the same cause, and was utilized as silage.

The earlier potatoes were nearly ruined by the short but sharp drouth, while the later ones, of the same varieties, decayed so largely as to reduce the yield fully one-half. Our corn crop was excellent, and was harvested in the finest condition. Nearly five acres of stover, besides an acre of cow peas, and a small amount of Hungarian were placed in the silo in alternate layers, so as to afford an occasional change of diet to animals whose appetites demand variety as much as our own do. The silo offers every facility for gratifying this demand, and affords the safest and most economical plan for storing our many forage crops.

The dairy has been devoted exclusively to supplying milk and butter to the boarding department of the school. The labor in the creamery has, as heretofore, been chiefly performed by the students, some of whom are always glad in this way to qualify themselves for similar work at home or elsewhere. During the year a new and more commodious Stoddard creamer was substituted for the old and well-worn creamer of the same manufacturer.



The erection of a new piggery and the possible removal of the old one marks one more step towards the better equipment of the farm for its future usefulness, and relieves the public view of one of its most offensive features. The new building is thirty-eight feet in length by fifteen feet in width, with eleven-foot posts. Above will be ample space for the storage of bedding. Below there will be a room, fourteen by fifteen feet, combining good facilities for heating or boiling, feeding, and slaughtering, the remaining twenty-four feet being divided into suitable pens for breeding, fattening, and growing animals. The building is nearly completed. Other buildings are still needed for the protection of our more expensive farm implements, especially for our farm wagons, carts, and the more bulky machines for harvesting our hay crop. We desire to suggest the economy as well as convenience of such buildings. The labor department becomes more and more important, as the number of students seeking employment, as a necessary condition of their education, annually increases. The new and attractive buildings, erected during the present year for their better accommodation, will, no doubt, find their capacity fully tested in the near future, and the demand for labor will be proportionately increased. Let me suggest that improvements upon a larger plan than have yet been attempted might be made, with your consent, and under your direction.

In closing my brief and very cursory report, allow me to say that very much has been excluded from it of paramount importance to the farm, to be presented for your consideration at some time.

All of which is respectfully presented,

L. P. CHAMBERLAIN,

*Farm Superintendent.*

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## REPORT OF PROFESSOR PHELPS.

*To the Trustees of the Storrs Agricultural School:*

GENTLEMEN, — The lines of instruction coming under my control have remained essentially as last year. A general course, thought to be well suited to an institution of this kind, was mapped out two years ago, and may be found in my report as published in the School Report for 1888. The schedule of studies gives the

amount, and place in the course, of the agricultural instruction, as now arranged.

Much of the instruction is necessarily given in the form of lectures. Suitable text-books on many subjects are not to be found. Cyclostyled sheets, for the use of the Middle class, giving briefly the essential points of the subject under consideration, have proved very serviceable. Much more time is left for explanation, and the student is not obliged to take notes. With the Seniors, however, the lectures are given in the usual way, and each student is required to take down the substance of the lecture. Skill in taking notes is important, and training in this direction should not be overlooked.

The general plan of the course is to begin with a brief history of agriculture, ancient and modern; secondly, to enter into a study of soils, manures, and fertilizers, and the relation of these to plant-life and plant growth; and, lastly, a study of the higher forms of life, as represented in our domestic animals. Stock-breeding, breeds of live-stock, and cattle-feeding occupy a large part of the time of Senior year.

It is earnestly hoped that better facilities for class room illustration will be afforded at an early date. Charts, models, collections of specimens, implements, — in fact, a general agricultural museum, is greatly needed.

Much interest was created last year, in the Senior class, by the announcement that prizes were to be offered for the best essays on some special subject gone over by the class, together with an oral examination on the agricultural work of the course. The latter was held on the morning of Commencement Day, the exercises being open to the public. The subject chosen by the class for the essays was, "Breeds and Breeding of Dairy Stock." The gift was the generous offer of the Connecticut Dairymen's Association, and consisted of twenty-six dollars in gold, divided into three prizes, of fifteen, eight, and three dollars. It is hoped that a prize of this kind may be made a permanent feature, as it will stimulate a lively competition among the students, and afford the public an opportunity of seeing some results of the work of the course.

The work of the Experiment Station has been made of value to the students as far as seemed possible. The stations of this country have been well called the "farmer's schools," while the agricultural colleges and schools are intended more especially for farm-

ers' sons. The work of the experiment stations is outlined in the act of Congress under which they were established. In no case should the funds be used directly for purposes of instruction. Work is provided the students as far as seems advisable. Much of this is better done by the young men than by the average farm workman. The means of illustration afforded by the experiments under way are of much value. New fodder crops are grown; fertilizer experiments on grass and corn have been started, with the purpose of continuing through a series of years; while in the grass garden may be found nearly all of our native grasses. An observing student will acquire much from having such experiments carried out under his eye. A detailed report of the experiments will be found in the reports and bulletins of the station.

Respectfully submitted,

C. S. PHELPS.

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## REPORT OF PROFESSOR HUTTON.

*To the Trustees of the Storrs Agricultural School:*

GENTLEMEN, — In submitting a report for the past year on the work of the school embraced in my department, there is little of note to record.

The subjects are stated elsewhere, as well as the position they occupy in the course of study. As these were somewhat fully outlined in my report for last year, I need not repeat the same, but would respectfully refer you to that for further particulars.

While nothing unusual has transpired in my own work during the past year, it is a pleasure to refer to the improvement that has been made in our equipment generally, by the erection of the new buildings, as well as in the increase in material and accommodation. Additions, as required, have been made to the supply of apparatus, thus putting the school in a position to do better work than heretofore.

In the course of instruction here it is endeavored constantly to keep in mind the primary object of the school, *viz.*: to educate young men for the farm, not from it. Nor is the fact overlooked that education consists not less in the training of the mind than in the gaining of information.

In the occupation of teaching there is both pleasure and labor, which, though physically light, mentally is not always so. But nothing tends so much to lighten the work of instruction, and make it agreeable to both teacher and class, as a love for study, and a desire for more knowledge. Not a few of the students that enter this school have not had the best educational advantages, and hence find difficulty in taking up new studies, and in grasping new ideas. Such, however, frequently prove our best students, when made conscious of their lack of knowledge, and instilled with a love for more. It is gratifying indeed to note the interest manifested by the students generally in all that pertains to their improvement in any way. With few exceptions, and such are found in every school, they are inspired with a sincere determination to improve their time and opportunity in acquiring as much as possible in their short course here.

Respectfully, J. R. HUTTON.

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#### REPORT OF MISS NETTLETON, TEACHER.

*To the Trustees of the Storrs Agricultural School:*

GENTLEMEN, — In compliance with your request, I submit the following report :

As you are aware, instruction given by me is chiefly to the Junior class. The studies of this department and time devoted to each may be found in the schedule.

##### MATHEMATICS.

The study of Arithmetic is pursued by the Junior class through the entire year. Careful and thorough preparation of work is required, and the aim is to prepare the student to apply his knowledge to practical use.

During two terms of the year instruction in Algebra is given to the Middle class ; the time allotted to the study enabling us to consider the subjects taken from the beginning (omitting such portions as seem advisable), through Factoring, Fractions, and Problems producing Fractional Equations.

##### ENGLISH.

This study is also pursued by the Junior class during the year. The methods of instruction are, recitations from text-books, cor-

rection of exercises in false syntax, study of synonyms, practice in letter-writing, reproduction of selections read in class, and regular practice in composition.

The most to be obtained from the Senior, also the Middle, class in the limited time assigned to English, is from practice in composition. This is regularly required, and many of the students give evidence of commendable effort in the production of creditable essays. Two evenings, at least, in each term rhetorical exercises are given by the students, and the benefit derived from this practice is worthy of mention.

#### PHYSICAL GEOGRAPHY.

This topic has been added to the list of studies pursued by the Junior class, and much interest has been manifested in this important subject.

#### BOOK-KEEPING.

The instruction in Book-keeping embraces single entry, and the aim is to prepare the student to keep accounts with accuracy.

In addition to class-room duties, assistance in clerical work relating to school accounts has been given the principal when desired.

Respectfully submitted,

J. NETTLETON.

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### REPORT OF THE MATRON.

*To the Trustees of the Storrs Agricultural School :*

GENTLEMEN, — There has been very little change in the work and management of my department during the year.

The 6th of December, the grand moving day to the new dormitory, was celebrated among the students by appropriate exercises ; and the warmth, comfort, and handsome furnishings of their new rooms are duly appreciated.

The healthfulness of the school during the year has been the subject of remark. With the exception of " la grippe," of which we had full share, there has not been a case of serious illness among the students.

Our house-furnishings, together with those of the table, have been replenished from time to time, as necessity required, and are



now in as good condition as they have been at any time since my acquaintance with the school.

From our garden and other sources we obtained about five hundred quarts of small fruits, which were prepared for the use of the boarding department.

The average price of table board for the year was \$2.50 per week.

Very respectfully submitted,

CATHARINE E. HILLIARD.

## TREASURER'S REPORT.

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H. C. MILES, *Treasurer*,

*In account with* STORRS AGRICULTURAL SCHOOL.

1889.		DR.		
Sept. 3.	By cash, J. P. Barstow,	.	.	\$ 35.00
Oct. 2.	" " Comptroller,	.	.	2,000.00
Nov. 13.	" " Experiment Station,	.	.	66.75
" 13.	" " note discounted,	.	.	1,481.25
Dec. 18.	" " Experiment Station,	.	.	75.25
" 28.	" " J. P. Barstow,	.	.	3.72

1890.				
Jan. 4.	" " Comptroller,	.	.	2,000.00
" 10.	" " B. F. Koons,	.	.	115.31
" 14.	" " " "	.	.	176.88
" 25.	" " " "	.	.	100.00
" 25.	" " L. P. Chamberlain,	.	.	33.24
Feb. 10.	" " note discounted,	.	.	1,472.75
" 19.	" " Experiment Station,	.	.	194.77
Apr. 3.	" " Comptroller,	.	.	2,000.00
" 14.	" " B. F. Koons,	.	.	183.89
May 7.	" " Experiment Station,	.	.	90.77
" 29.	" " note discounted,	.	.	1,468.50
June 30.	" " Experiment Station,	.	.	41.60
July 9.	" " Comptroller,	.	.	2,000.00
				\$13,537.68

1890.		CR.		
June 30.	Paid salaries, .	.	.	\$3,455.13
30.	" Boarding Department, .	.	.	1,455.20
30.	" Farm labor, .	.	.	703.61
30.	" Furniture, .	.	.	368.55
30.	" Fuel and lights, .	.	.	625.72



June 30.	Paid Farming tools and repairs,	.	.	\$148.15
30.	" Telephone and advertising,	.	.	179.76
30.	" Fertilizers, seeds, and feed,	.	.	581.31
30.	" Materials and repairs,	.	.	352.58
30.	" Books and stationery,	.	.	326.00
30.	" Insurance,	.	.	16.50
30.	" Chemicals,	.	.	35.35
30.	" Ice,	.	.	70.15
30.	" Farm stock,	.	.	70.00
30.	" Sundries,	.	.	386.24
30.	" Notes,	.	.	3,000.00
30.	" " and interest,	.	.	1,020.50
				<hr/>
				\$12,794.75
30.	Balance of account,			742.93
				<hr/>
				\$13,537.68
				<hr/>

Frank L. Rodgers and W. C. Durand, Auditors of Public Accounts, certify that this statement is correct.











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1890/91

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ANNUAL REPORT  
OF THE  
TRUSTEES  
OF THE  
STORRS AGRICULTURAL SCHOOL,  
AT  
MANSEFIELD, CONN.  
(P. O., STORRS, CONN.)  
1891.

---

Printed by Order of the General Assembly.

---

HARTFORD, CONN.:  
PRESS OF THE CASE, LOCKWOOD & BRAINARD COMPANY.  
1892.





ANNUAL REPORT

OF THE

TRUSTEES

OF THE

STORRS AGRICULTURAL SCHOOL,

AT

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PRESS OF THE CASE, LOCKWOOD & BRAINARD COMPANY.

1892.

## TRUSTEES.

HIS EXCELLENCY MORGAN G. BULKELEY, *ex officio*, President.

*Appointed by the Board of Agriculture.*

E. H. HYDE,

STAFFORD, Vice-President.

*Appointed by the Senate.*

		Term expires.
T. S. GOLD,	W. CORNWALL, <i>Secretary.</i>	1893
HENRY C. MILES,	MILFORD, <i>Treasurer.</i>	1895
WM. E. SIMONDS,	CANTON,	1893
J. M. HUBBARD,	MIDDLETOWN,	1893
J. H. HALE,	SOUTH GLASTONBURY,	1895
E. C. PINNEY,	STAFFORD,	1895
PROF. S. W. JOHNSON,	NEW HAVEN, <i>ex officio</i> , <i>Director</i> <i>of the Connecticut Experiment</i> <i>Station.</i>	

## EXECUTIVE COMMITTEE.

H. C. MILES,

T. S. GOLD,

J. H. HALE.

## AUDITORS.

E. C. PINNEY,

J. M. HUBBARD.

## OFFICERS OF THE SCHOOL.

B. F. KOONS, *Principal, Professor of Biology and Natural History.*

A. B. PEEBLES, *Professor of Chemistry and Physics.*

C. S. PHELPS, *Professor of Agriculture.*

MISS JOSEPHINE NETTLETON, *Instructor in Mathematics and English.*

L. P. CHAMBERLAIN, *Farm Superintendent.*

MRS. C. E. HILLIARD, *Matron.*

## STATION STAFF.

W. O. ATWATER, *Director.*

C. D. WOODS, *Vice-Director and Chemist.*

C. S. PHELPS, *Agriculturist.*

H. M. SMITH, *Assistant Chemist.*

E. A. BAILEY, *Assistant Agriculturist.*

# State of Connecticut.

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## REPORT.

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*To His Excellency Morgan G. Bulkeley, Governor of Connecticut :*

As Secretary of the Board of Trustees of the Storrs' Agricultural School, I have the honor to present to you the Annual Report for the year 1891.

While much remains to be done before reaching the ideal upon which the Agricultural School at Mansfield was established, yet the substantial progress of the past year gives encouragement for its speedy attainment.

It was founded upon the plan of providing for the boys of Connecticut, taken right from the district schools of the State, an opportunity to acquire so much knowledge of agriculture, both practical and theoretical, and of the sciences which form the basis of all its work as could be taught in a period of two years. The developments and applications of science to the practical arts of life, but especially to agriculture, are advancing at a rate never before known in the world's history. Each year is witness to these triumphs, and agriculture can hold its place as the basis of all national wealth and prosperity only when its practical workers are able to grasp and apply the discoveries of science. It was believed that there were young men enough in Connecticut eager to embrace such opportunities to gain knowledge, to demand such an institution.

With the increased accommodations and consequent privileges, the roll of students is correspondingly increasing. The necessity for a new dormitory of the same size as the one recently built, and for which a place was provided in the location of the new buildings, is fully apparent. The new

class rooms are designed to accommodate twenty-five students each, with some larger for lectures. Two classes of twenty-five each would reasonably fill these rooms, making a total of fifty students, which was about as large a number as in our original ideal could be most advantageously educated in a farm school. We found in the progress of our work that some of our pupils had failed to improve all the advantages of the district schools, or had been deprived of them by circumstances, and we were obliged to provide instruction for a junior or preparatory class in arithmetic and other common studies. Taking these into account, and our class of thirteen which graduated in June, our catalogue shows a membership of sixty-three during the year 1891, a very gratifying result for ten years as proof not only that the school provides for an acknowledged want, but that the school is securing the confidence of the State, and that its demands for increasing means of support will be cheerfully granted to the full measure of its wants.

Among the notable events of the past year have been the furnishing and occupancy of the new dormitory, December 6, 1890, and of the main building December 2, 1891.

The boring for water continued to a depth of 850 feet through solid rock, when an abundant supply of pure water was obtained, which rose to within forty feet of the surface, yielding to pumping for ten hours from fifteen to forty-five gallons per minute without diminution of the supply, the contract requiring fifteen gallons per minute.

A permanent and abundant supply of water being thus assured, your building committee were instructed to erect a tower with windmill, pump, and tank. This work has been completed and we now have an abundant supply of water for all purposes, including very perfect arrangements for protection against fire. The same parties, Messrs. Smith & Winchester, who bored the well, erected the tower, windmill, tank, and other fixtures.

The tower is octagonal, twenty feet in diameter at base and forty feet to the bottom of the tank, which has a capacity of fifteen thousand (15,000) gallons.

The pumping apparatus consists of a 16-foot pumping air-ometer, wind engine, and an artesian well-pump having an artesian well-cylinder of  $3\frac{3}{4}$  bore, made of brass, and placed one hundred and twenty-five (125) feet from the surface with twenty-five (25) feet of suction pipe on the lower end so as to enable the water to be drawn from a total depth of 150 feet from the surface. Frost-proof coverings are applied to the tank and pipes.

The frame work of the tower is of best hard pine and the covering of best cedar shingles. The tower stands in the rear of the main building on a wall laid in cement resting on the solid rock, the entire height being about 75 feet.

Considerable work has been done in grading about the new buildings, mostly by the students, under proper direction.

Some changes have been made in teachers: Prof. Chamberlain has been relieved from the duty of class-room instruction to devote his whole time to the care of the farm. To Prof. Phelps has been assigned the entire charge of class-room instruction in agriculture, with so much field teaching as he can bestow in connection with his duties to the Experiment Station. To enable him to perform those additional duties an assistant was given him in the work of the station.

Prof. A. B. Peebles, a graduate of the Michigan Agricultural College and assistant there, was called to take charge of the department of chemistry and physics, made vacant at the opening of the fall term by the resignation of Prof. Hutton.

The school is now fairly equipped in its corps of teachers, in its museum, and library, and its laboratories, and lecture-rooms, with apparatus to illustrate the different branches of science which pertain to agriculture, especially in the chemical department, which is provided with working tables for each student, where he may learn practically the properties and constitution of all material objects, and the laws which govern their varied combinations, both chemically and as living organisms. We are prepared to teach well all the student can learn both practically and theoretically in his two or three



years' course; but we must admit the weight of the opinion of our teachers that they could do better work, more satisfactorily to themselves, with a still fuller equipment. Our plan comprehends in the near future increased facilities for practical instruction in carpentry and repair of tools, a wider field of study in the culture and varieties of fruits, flowers, vegetables, grains, and forage crops, especially through the work of the Experiment Station, an increase of apparatus to illustrate the discoveries and practical applications of modern science, while the interest in live stock and dairy management surely demands increasing study to insure the best results; and lastly, we name the library, which should have a sufficient appropriation to present on its shelves to the inquiring student, not only the latest results of scientific research, but also, in full, the economical and political history of the world.

These are things to be secured by growth. It would have been presumptuous to have sought them all at once however desirable they might have seemed, but now their claims are pressing, and here we only voice the sentiment of our teachers, which meets our hearty response, and of all intelligent citizens who have taken the pains to investigate the work the Storrs School is now doing.

The terms and privileges of the Storrs School invite comparison with those of any other institution in preparing young men for their life work. The terms for tuition are twenty-five dollars per year, which is remitted in worthy cases. Furnished rooms are free; no charge for chemicals and apparatus in the laboratory, except breakage. Board, including fuel, lights, and washing, is provided at cost. No charge is made for use of library, reading-room, and transportation of baggage to and from Eagleville. All the students are required to work a certain number of hours daily, and except when this work is especially designed for instruction they receive as compensation eight cents an hour. Special opportunities are given those who desire to work extra hours, so that some students earn enough to meet nearly or quite all their expenses.



For further particulars reference is made to the report of the principal containing reports from those in charge of each department, calendar, catalogue of students, course of instruction, list of text-books, commencement exercises, list of prizes awarded, the alumni association, winter course of lectures, library, reading-room, inventory, school expenses, labor of students, boarding department, farm inventory, farm and garden products, permanent improvements, balance sheet of farm, and report of treasurer.

Respectfully submitted,

T. S. GOLD,

*Secretary.*

*To the Board of Trustees :*

I have the honor herewith to submit to you the report of the Storrs School, for year ending Nov. 30, 1891.

Very respectfully,

B. F. KOONS.

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#### REPORT OF PROFESSOR PEEBLES.

*To the Trustees of Storrs Agricultural School :*

GENTLEMEN, — The work in the Department of Chemistry and Physics has been along the lines marked out in the regular course. A fair equipment for work in chemistry, supplemented by apparatus devised by the class, has enabled the Senior students in organic chemistry to perform the operations given in the text-book, the time being about equally divided between recitations and laboratory work. A beginning in quantitative analysis has been made, which will lead on during the year to the analysis of agricultural products, fertilizers, soils, water, and food stuffs.

The class have nearly finished geometry, and later will take up trigonometry, preparatory to work in surveying and leveling.

One hour a week is devoted to the study of English and rhetorical work.

The Middle Class has finished the course laid down in the text-book on elementary chemistry. One day of each week has been employed in manipulations, laboratory work, making gases, and

determining their properties. A short course in blow-pipe has been completed.

In physics the usual course is being pursued. No laboratory work has been possible in this subject for lack of apparatus. Not the best instruction is possible with the very meagre appliances at hand. As the time the young men have here is short, it is specially desirable they should have the very best opportunity possible to gain a practical working knowledge of the subjects considered.

A brief course of lectures on Landscape Gardening has been given the Middle Class. The hope is to awaken an interest in the subject of home adornment, ornamental gardening, tree planting, shrubbery, laying out of walks and drives. Practical application has been given the subject by making such a start in collecting and transplanting native trees and shrubs as the season would allow. Six weeks in physiology and hygiene completes the course on this subject. A text-book was followed. A few models would assist very much in the study of this important topic.

The further work of the year will follow the revised course as laid down in the schedule of studies.

Very respectfully submitted,

A. B. PEEBLES,

*Department of Chemistry and Physics.*

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## REPORT OF PROFESSOR PHELPS.

*To the Trustees of Storrs Agricultural School:*

GENTLEMEN, — Early in the present year your Board saw fit to enlarge my duties in the School. The Executive Committee of the Station, at the same time, relieved me of the details in the management of the agricultural work of the Station by the appointment of Mr. E. A. Bailey as Assistant Agriculturist. By this change the class-room instruction in agriculture is brought entirely under my charge, thereby affording opportunity for arranging a course of instruction covering the entire time of the regular school course.

The schedule of studies will be found in another part of this report. The course as now arranged for middle year covers, first, a brief history of agriculture, ancient and modern, the arrange-

ment of farm buildings and fields for convenience and economy, rotation of crops, etc.; second, soils, tillage, and manures; and, third, farm crops, their cultivation, value, and uses. During senior year the class takes up, first, stock-breeding and breeds; second, cattle-feeding and dairying; and, third, a study of fertilizers in their relations to soils and crops. For the spring term of senior year there has been added a study of fruit culture.

The importance of fruit growing, as a profitable branch of New England agriculture, becomes more noticeable year by year. The constantly increasing demand for fresh fruits in our home markets, and the adaptability of this branch of farming to our soils and climate, bespeak the importance of making horticulture a prominent feature in our course of instruction. In order to make the work in horticulture of a thoroughly practical nature, it would seem advisable that a portion of the farm be devoted to a fruit garden, where a large assortment of fruits could be grown on a more or less extensive scale. Most of the work of setting out and caring for the trees, shrubs, vines, and other plants could be done by the students as class-work. Some work in grafting, pruning, and transplanting has already been undertaken, and will be enlarged as far as facilities will allow.

Much interest has been aroused in the senior classes during the past two years by the offer of prizes for essays on some subject relative to dairying, together with an oral examination on the agricultural work covered during the course. The gift was the generous offer of the Connecticut Dairymen's Association, and consisted of twenty-six dollars in gold, divided into prizes of fifteen, eight, and three dollars. The Alumni Association also offered prizes of ten and five dollars for the best examinations in "practical agriculture." It is confidently hoped that the offering of prizes will be continued. It excites a healthy spirit of competition among the students, and by the public examination affords the people of the State an opportunity of judging our work. The Alumni prizes are to be continued, and the coming year (1892) the oral examination is to be public, and will be held the morning of commencement day, the entire class being required to participate. Prizes for the best essays on some subject related to dairying will also be offered if the funds can be obtained.

The work of the Experiment Station has been made of value to the students as far as seemed possible. The work of experiment

stations is explicitly outlined in the act of Congress under which they were established, and in no case can the funds be legitimately used for purposes of instruction. Work is afforded the students as far as seems advisable, and the field and grass garden experiments in progress cannot fail to be of value to the observing student.

A collection of implements and models, together with series of charts, are greatly needed to facilitate class-room instruction. By a small expenditure of funds, the work of the course could thus be greatly aided. Collections of seeds and dried specimens have already been started, and will be enlarged as rapidly as possible. Gifts of uncommon seeds and plants, suitable for a museum collection, or for planting in the grass garden, will be very acceptable from any source, and may be forwarded to my address, Storrs Agricultural School, Storrs, Conn., or by express to Eagleville

Respectfully submitted,

C. S. PHELPS.

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#### REPORT OF 'MISS NETTLETON, TEACHER.

*To the Trustees of Storrs Agricultural School :*

GENTLEMEN, — In reviewing the work of my department during the year just closed, the result seems more satisfactory than at any similar period since my connection with the school.

A sense of justice compels me to add, that this is not due alone to effort on the part of the writer, but also to the hearty co-operation of those whom it has been my pleasure to meet in the recitation-room. Not that the accomplishment of everything sought has been attained, for

“ Labor with what zeal we will,  
Something still remains undone.”

More and more is the truth realized, that “ here is a field worthy of every effort.” By repeated precept and example, does our worthy Principal remind his colleagues that duties to those under their supervision are not restricted to the recitation-room.

At the beginning of the year, three young ladies residing in this vicinity sought and obtained permission to enter the Junior Class for daily recitations ; an innovation not unwelcomed by those friends of the institution who hope the time not far distant when young women may be admitted as regular members of Storrs School.



As may be learned by reference to the schedule, the study of arithmetic is pursued throughout the school year. A knowledge of practical arithmetic is not only invaluable to the student, but indispensable to the man of business. As a means of acquiring this, careful and thorough preparation of work assigned is required previous to the hour of recitation.

Algebra is taught the Middle Class the last two terms. Owing to increased demands upon time for recitations, Prof. Hutton kindly came to the rescue, so that during the spring term the class was under his instruction.

#### ENGLISH.

The methods of instruction to the Junior Class consisted of recitations from text-book, correction of exercises in false syntax, study of synonyms, practice in letter-writing, reproductions of selections read in class, and practice in original composition.

The limited time allowed the other classes, viz., one hour per week, forbade more than regular practice in composition. In this line, however, marked improvement was noted, and creditable work accomplished by the majority of students.

Two evenings in each term rhetorical exercises were given by the students; these were found to be not only of profit to those who took part therein, but, judging from the presence and courteous attention of others, of sufficient interest to call them for an evening from their homes.

The study of physical geography is taken up at the beginning of the year, and continued until such time in the winter term as is necessary to have considered the subjects treated of in text-book; after which, history receives attention until the end of the year.

#### BOOKKEEPING.

Only the method of single entry is taught; but the aim is to prepare the student to keep accounts with accuracy. Besides examples found in text-book, those of a practical nature, showing gain or loss in productions of farm products, are considered.

In addition to what has been mentioned, regular attention is given to work in library and assistance in keeping school accounts.

Respectfully submitted,

J. NETTLETON.

## REPORT OF L. P. CHAMBERLAIN, FARM SUPERINTENDENT.

*To the Trustees of Storrs Agricultural School :*

## THE FARM.

The Storrs School farm, comprising about one hundred and seventy acres of diversified soil, and of a decidedly undulating surface, may now be regarded as having become fairly productive, when measured by the standard of our well-improved Connecticut farms ; but when measured by the truer standard of its possible productiveness, even within the limits of profitable cultivation, its products by no means justify such a claim. Nearly all those lands that are naturally suited to the growth of hay or cereals and other annual crops have been improved by cultivation and by fertilization. More than forty acres are now entirely free from boulders and all other obstructions to easy cultivation. The smaller stones, which abound in most of the upper soil, but do not penetrate the subsoil to a troublesome extent, have also been quite thoroughly removed, thus greatly lessening the danger from impatience in cultivation, as well as the cost of growing all cultivated crops. Quite likely no more remain in many fields than are needed in the soil to preserve its texture, temperature, and moisture. Enough has been done in the line of mechanical improvement and partial fertilization to greatly increase the live stock of the farm. This gives additional manurial resources, and warrants the adoption of a much more liberal system of cropping than that of the past. The better utilization of the corn crop, through the silo, has largely contributed to the increase of dairy products, and to make their production a source of increased profit. Little has been done to improve the pasture lands, beyond the cutting of bushes, to prevent their complete occupancy of the depleted soil.

## LABOR.

As no assistant farmer has been employed since July, 1890, and the working force of students has been smaller than usual during the past year, less has been attempted in the way of permanent improvements upon the farm than during the preceding years. To this should be added the fact that the hours during which each student is required to labor has been reduced from five to three, and for the Senior Class, during the spring term, to the still narrower limit of two hours. This small amount of labor has been

shared about equally with the Experiment Station during the forenoon of each day, thus reducing the amount of labor furnished by the Senior Class to six hours upon the farm, daily. From this it will be readily seen that while the principal object of the student has been promoted, the work of the farm has suffered, and its possible products lessened. During the summer months, two only of the students remained to assist in the farm work. This necessitated the employment of day labor to a limited extent during haying and harvest. On the whole, the cost of farm labor has been lessened, while its aggregate products have considerably increased. The work of the average student has been fairly efficient. The fact is noticeable that those who excel in the class room, those with whom improvement is the dominant purpose and the steady aim, are also the reliable and efficient helpers in the work of the farm. There are but few exceptions to this rule.

#### GRADING.

As soon as practicable after the opening of the fall term, and the necessary work of harvesting was completed, the improvement of the grounds about the new school buildings was begun, and has been steadily prosecuted till the present time. A strong force has been employed, and a large amount of earth has been removed. Only such work has been done as was plainly necessary in any future layout of the grounds that may be adopted, and was needful, mainly, to protect the buildings from inflowing water. A considerable part of the subsoil removed has been used to fill the rocky and useless ravine in the rear of the buildings, and so to hide a natural deformity, and to add another acre to the productive area of the farm. This work is unfinished, but enough material remains to complete it. A large amount of labor has been expended in blasting and removing rocks, and in bringing the surface to such a level that it could be covered at a uniform depth of about six inches, but this outlay seems to be fully justified by the improvement already accomplished.

#### POULTRY.

Owing to the lack of suitable accommodations, but little has been done in breeding or the production of eggs. It is believed, however, that both of these industries may be made profitable, as



well as instructive to all students who care to know how to manage poultry successfully. A new building has been erected at a very moderate cost, fifty feet in length, and divided into five compartments, with ample yard room, for one hundred hens. A number of different breeds may be kept for the purposes of comparison as to their value in the production of meat or eggs.

The location selected is at a suitable distance from the buildings, is sheltered from cold winds, and has a warm southern exposure.

#### CROPS.

Hay excepted, all our staple crops have been abundant, and of a superior quality.

Corn has reveled, throughout the entire season, in almost all those natural conditions that induce perfect growth and maturity. About four acres were grown, and a glance at the table of farm products will show with what results.

Oats, which last year were so nearly ruined by a universal blight, have this year produced heavily both of straw and grain. No signs of the blight appeared upon the early crop, though upon a second crop in the same field, grown for late forage, it was as marked and destructive as before. This is a broad hint that the scourge has come to stay with us, and only requires peculiar conditions for its future development.

Potatoes have yielded well, and their quality is excellent. Only a few have decayed, and only the white varieties have suffered at all.

Buckwheat has yielded largely. Fourteen quarts of seed sown on one acre of well fertilized soil produced nearly forty bushels of grain of the highest quality. This grain deserves better treatment than it receives.

Our hay crop, as will be seen by reference to the table given below, has been less than that of last year, but the shrinkage relates more to bulk or weight than to its nutritive or feeding value, and was owing to unfavorable climatic conditions alone.

But few roots are grown beyond the needs of the boarding department of the school. Silage, of equal value, can be grown much more profitably. Our garden products, in great variety, have been plentiful and have matured in the greatest perfection. Great care is used in selecting the most approved varieties of all these products.

## REPORT OF THE MATRON.

*To the Trustees of Storrs Agricultural School:*

GENTLEMEN, — In compliance with your request, I present to you the following report of the work under my direction.

The most important event at the beginning of the fiscal year, Dec. 1, 1890, was the opening of the rooms in the new dormitory for the occupancy of the students, who, on the 6th of December, enthusiastically took possession. The removal of the students to the new dormitory, while the boarding department remained in the old building, added greatly to the work and care of the matron. It was supposed at that time that the boarding department would soon be transferred to new rooms in the main building. Dec. 1, 1891, we were still in our old quarters, but removed the following day.

Ample furnishings for the boarding department have been provided by the committee appointed to procure needful outfit for the main building. Many thanks are due this committee, as well as Mrs. Gold and Mrs. Hale, for interest manifested in the judicious selection of furnishings which give the rooms an air of home-like comfort. Especially do we appreciate the tasteful and appropriate equipments for the dining-tables.

At the commencement in June, we opened the house to friends of the class of '91, also to former students and graduates. Entertainment was furnished to more than one hundred and fifty guests, testing to the utmost our accommodations in the old building.

In making preparation for the school year, beginning Sept. 21, 1891, besides the new dormitory, all the available rooms in the old building were put in readiness for the use of students, every one of which is occupied.

During the summer about seven hundred quarts of fruits obtained from our own garden and elsewhere, were prepared and preserved for future use in boarding department. The stock of bed and table linen, table and kitchen furnishings, so generously replenished by the committee, are in better condition than at any time since my connection with the school.

As usual, the price of table board has varied from term to term. The average price during the year has been \$2.52 per week.

As nearly as I have been able to ascertain, the supplies received from farm and garden during the year are as follows:

3,326	quarts new milk.	8	bushels apples.
3,211	" creamery milk.	4 $\frac{1}{2}$	" onions.
372 $\frac{1}{2}$	" cream.	1 $\frac{1}{4}$	" beans.
21 $\frac{1}{2}$	doz. celery.	25 $\frac{1}{2}$	doz. sweet corn.
45 $\frac{1}{2}$	lbs. chicken.	2 $\frac{1}{2}$	bush. cucumbers.
37	cabbages.	6 $\frac{1}{2}$	" pears.
100	bush. potatoes.	2 $\frac{1}{2}$	" turnips.
2,355	lbs. beef.	300	lbs. squashes.
900	lbs. butter.	1	bush. peppers.
80	heads lettuce.	2 $\frac{1}{2}$	" parsnips.
150	lbs. rhubarb.	15	" grapes.
60	lbs. asparagus.	1,481	lbs. pork.
54	quarts strawberries.	17	bush. tomatoes.
81	" currants.	2 $\frac{1}{2}$	" beets.
185	" raspberries.	5	" peas.
8	" cherries.		

Respectfully submitted,

CATHARINE E. HILLIARD.

## CALENDAR.

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1891.

Winter Term began January 5th. Spring vacation, March 28th to April 5th. Spring Term began April 6th. Tenth Annual Commencement, June 19th. Fall Term began September 21st. Christmas vacation, December 19th to January 3d, 1892.

1892.

Winter Term begins January 4th. Spring vacation, March 26th to April 3d. Annual Commencement June 17th. Fall Term begins Monday, September 26th.

All communications should be addressed not to individuals, but to the Storrs Agricultural School; also, all bills should be made against the school instead of the purchasing officer.

## CATALOGUE OF THE STUDENTS FOR THE YEAR 1891.

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C. G. Allyn,	Hebron, Tolland Co.
H. L. Andrews,	Deep River, Middlesex Co.
E. S. Backus,	Andover, Tolland Co.
A. M. Baker,	Andover, Tolland Co.
F. O. Barrows,	Mansfield, Tolland Co.
E. T. Beard,	Milford, New Haven Co.
W. H. Bishop,	Clintonville, New Haven Co.
G. S. Bowen,	Eastford, Windham Co.
C. Brimble,	Torrington, Litchfield Co.
S. H. Buell,	Plymouth, Litchfield Co.
H. P. Cadwell,	Hartford, Hartford Co.
C. V. Chandler,	South Windsor, Hartford Co.
E. G. Chesbrough,	Scotland, Windham Co.
A. H. Clark,	East Morris, Litchfield Co.
G. E. Colburn,	Mansfield, Tolland Co.
W. E. Cummings,	Spring Hill, Tolland Co.
F. W. Darnstaedt,	Hartford, Hartford Co.
W. B. Dayton,	Plantsville, Hartford Co.
D. Dunivan,	Hartford, Hartford Co.
J. Dunivan,	Hartford, Hartford Co.
W. M. Dunivan,	Hartford, Hartford Co.
C. W. Eddy,	Simsbury, Hartford Co.
A. W. Fenn,	Plymouth, Hartford Co.
R. C. Fenton,	Willimantic, Windham Co.
G. L. Fish,	Mansfield, Tolland Co.
E. B. Fitts,	E. Windsor Hill, Hartford Co.
J. S. Fowler,	Pomfret Center, Windham Co.
H. E. French,	Hartford, Hartford Co.
W. J. Frey,	Suffield, Hartford Co.
J. C. Frisbie,	Southington, Hartford Co.
M. M. Frisbie,	Southington, Hartford Co.

A. H. Griswold,	New Britain, Hartford Co.
J. J. Guildford,	West Winsted, Litchfield Co.
C. T. Guildford,	West Winsted, Litchfield Co.
A. G. Hall,	Meriden, New Haven Co.
G. H. Hall, Jr.,	Manchester, Hartford Co.
H. C. Harrison,	Northford, New Haven Co.
W. Holden,	Norwich, New London Co.
K. K. Kimberly,	W. Torrington, Litchfield Co.
R. C. Kolb,	South Coventry, Tolland Co.
T. A. Mack,	Andover, Tolland Co.
H. G. Manchester,	West Winsted, Litchfield Co.
G. H. Merwin,	Westport, Fairfield Co.
G. Oehlers,	Chestnut Hill, Fairfield Co.
F. C. Osborn,	Litchfield, Litchfield Co.
M. H. Parker,	South Coventry, Tolland Co.
M. J. Phelps,	Mansfield, Tolland Co.
H. V. Phelps,	Mansfield, Tolland Co.
F. Rosebrooks,	Mansfield, Tolland Co.
W. L. Rosebrook,	Mansfield, Tolland Co.
L. J. Rosebrook,	Mansfield, Tolland Co.
W. F. Schults,	Hartford, Hartford Co.
C. H. Schults,	Hartford, Hartford Co.
G. O. Smith,	South Willington, Tolland Co.
A. M. Snow,	Mansfield, Tolland Co.
H. G. Sperry,	Bolton, Tolland Co.
H. W. Sweet,	Lebanon, New London Co.
C. H. Vibert,	Meriden, New Haven Co.
T. H. Ward,	Bristol, Hartford Co.
H. E. Warner,	East Haven, New Haven Co.
W. A. Warren,	South Coventry, Tolland Co.
N. L. Wilson,	Mansfield, Tolland Co.
A. R. Yale,	Meriden, New Haven Co.

Whole number of students,	63
Number of graduates since the organization of the school,	77



# COURSE OF INSTRUCTION.

## JUNIOR YEAR.

Arithmetic,	}	Continued through the year.
English,		
United States History,		
Physical Geography,		
Mechanical Drawing,		

## MIDDLE YEAR.

Agriculture, English,	}	Fall Term,
Elementary Chemistry,		
Blowpipe, Anatomy of		
Domestic Animals, Land-		
scape Gardening, Human		
Physiology, Physics.		

## SENIOR YEAR.

Stock-Breeding, Entomology, Organic Chemistry, Physiological Botany, Geometry, English.
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Agriculture, Chemical Analysis, Botany, Zoölogy, Algebra, English, Physics.	}	Winter Term,

Dairying, Cattle Feeding, Qualitative Analysis, Political Economy, Zoölogy, English, Trigonometry.
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Agriculture, English, Mechanical Drawing, Algebra, Meteorology, Zoölogy, Chemistry, Book-keeping.	}	Spring Term,

Horticulture, Agriculture, Agricultural Chemistry, Geology, Surveying, Botany, English, Science of Government.
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QUESTIONS like the following are often asked concerning the School :

Just what are its objects or aims ?

What does it teach ?



What is the expense of each pupil ?

Who can attend ?

What are the conditions of admission ? etc.

As to the objects of the School, it aims to give to its pupils such an education as is best suited to their *real needs*; such as will be most useful to them in the line of their life work. In the educational systems of the past all classes were expected to pursue the same course of study, all minds were cast in the same mould, and in these systems—especially if the pupil passed beyond the three R's—Latin and Greek, and many other things quite useless to the industrial classes, occupied a very large part of the time. These ancient systems are giving place to others more nearly adapted to the *real needs* of those who take them. The surveyor studies those things that lie in the line of his life work, he gets an education that will fit him for his calling.

The doctor has a course of study suited to his needs; the engineer, instead of filling his brain with the principles of the dead languages, disciplines his powers and stores his mind with facts that will be useful to him in real life. So it is believed that there is a wide field of knowledge that is important, if not absolutely necessary, to the highest success of agriculture. No calling requires a wider range of information, gives an opportunity for the exercise of a wiser discrimination or a keener judgment, than that of the true agriculturist.

Also conditions are rapidly changing, new problems are constantly forcing themselves upon the wide-awake farmer; blight, mildew, rust, ravages of new insect enemies, new and labor-saving machinery, more economical and better fertilizers, better methods of using them, best varieties of a multitude of farm crops and how best to grow them, so that a general knowledge of all these subjects is needed, in order that he may be reasonably sure of success.

As to what is being taught; agriculture in all of its branches, and the closely allied sciences, together with English, occupy nearly the entire time of the course. Under the subject of agriculture,—first, a knowledge of the history and progress of agriculture is thought necessary as a foundation. The agriculture of ancient countries is reviewed briefly; followed by the history of

English agriculture, and concluding with the history and development of the agriculture of our own country.

**Soils.** Early in the course is taken up the study of soils, their origin, classification, chemical and physical properties, and their improvement by means of drainage, tillage, etc. This branch of the subject naturally includes manures and all home and commercial supplies of fertilizing materials.

**Farm Crops.** By study in the class-room and on the farm the student gets a general knowledge of farm plants; their origin, relative importance and value; their adaptation to soils and climates, and the best modes of cultivation.

**Horticulture.** A course in Horticulture has been recently added, Maynard's "Practical Fruit Grower" being found a valuable help. Instructive work is given the class as far as circumstances will allow. Grafting, pruning, transplanting, and the preparation and use of insecticides and fungicides, are included in this work.

**Farm Animals.** A large part of Senior year is occupied with a study of Stock-Breeding, the care and management of live stock and their products.

**Chemistry** receives much attention, the work extending well through two years, because the science enters so largely into everyday life on the farm; its principles being extensively employed in the selection of commercial fertilizers and the wisest and best use of these and the home produced; the kinds of soil to which they are applied and the crops they are to grow; also into the business of feeding and rearing animals, hence the chemistry of feeding and food stuffs, and the principles of the science as employed in the dairy.

**Geology.** As a knowledge of soils, their origin and composition, restoration and fertilization, is of prime importance; the study of Geology is necessitated.

**Botany.** And since plants enter so largely into the subject of feeding and food of farm animals and dairying, also farm products in general, considerable time is devoted to the principles of Botany, —the anatomy, physiology, and chemistry of plants. Also the lower forms of plant life, such as bacteria, blights, rusts, smuts, and molds, are studied.

**The Animal Kingdom** is studied, more particularly those parts most intimately related to the farm; namely, the anatomy and physiology of the domestic animals; and insect pests of the farm, orchard, and garden, and the best methods of checking their ravages.

**Human Physiology and Hygiene**, or the laws of health, receive a reasonable amount of time.

**In Physics** are studied the laws of electricity, magnetism, sound, light, heat, the atmosphere, mechanical powers, steam engine, etc.

**In Mathematics**, if the students have not already mastered it, Arithmetic is first completed, and then a brief course is given which leads up to the principles of leveling and land surveying.

**English.** The students receive at least one lesson a week, throughout the course, in essay writing, declamation, and public speaking; the pupils occasionally having an exercise before the whole School.

**Expenses.** No charge is made for furnished rooms. Tuition is \$25.00 a year, but those who are in limited circumstances and show themselves worthy, can have it remitted. Text books, table board, washing, fuel and lights, are furnished at cost. The whole expense per year, exclusive of tuition, averages about \$120.00 or \$125.00.

Pupils are required to spend three hours a day at manual labor on the farm, for which, and extra labor, they are allowed eight cents per hour, so that they earn from twenty-five to seventy-five, or even one hundred dollars a year, which is credited upon their bill of expenses.

According to the Act of the General Assembly establishing the School, "Boys whose parents are citizens of the State," can be admitted.

As to conditions of admission, those who can pass a satisfactory examination in common school Arithmetic, Geography, English, and United States History, can complete the course in two years; those who need further drill in these must take three years for it.

## LIST OF TEXT-BOOKS USED.

Johnson's How Crops Grow.  
Armsby's Cattle Feeding.  
Miles' Stock-Breeding.  
Steele's Inorganic Chemistry.  
Remsen's Organic Chemistry.  
Kedzie's Qualitative Chemistry.  
Thorpe's Quantitative Chemistry.  
Martin's Human Body.  
Gray's Lessons and Manual of Botany.  
Maynard's Practical Fruit-Grower.  
Dana's Text-Book of Geology.  
Scott and Morton's Soil of the Farm.  
Steele's Physics.  
Bradbury's Arithmetic.  
Wentworth's Algebra.  
Wentworth's Geometry.  
Wentworth's Trigonometry.  
Wentworth's Surveying.  
Hyde's Lessons in English.

Also a considerable number of books of reference from the school library.

Two changes have been made in our corps of instructors during the year. April 1st Professor Chamberlain was relieved from his class-room duties that he might have his entire time to superintend the farm, and all the class-room instruction in agriculture was placed in charge of Professor Phelps.

Also Professor Hutton resigned his position as chemist, at the close of the school year in June, and Prof. A. B. Peebles, a graduate of, and for some years an assistant in, the chemical department Michigan Agricultural College, was secured to take his place.

The Annual Commencement was held in June, at the close of the school year, when the following programme was presented by the graduating class of thirteen young men :

## COMMENCEMENT EXERCISES, JUNE 19TH.

## PRAYER.

*Music.*

H. P. CALDWELL, - - - - - Hartford  
 "Market Gardening."

\* C. V. CHANDLER, - - - - - South Windsor  
 "Bees."

\* W. E. CUMMINGS, - - - - - Mansfield  
 "Wastes and Wants of the Farm."

J. S. FOWLER, - - - - - Pomfret Centre  
 "Poultry Keeping in New England."

\* J. C. FRISBIE, - - - - - Southington  
 "Division of Labor."

\* A. H. GRISWOLD, - - - - - New Britain  
 "Pear Culture."

\* A. G. HALL, - - - - - Meriden  
 "The Colorado Potato Beetle."

H. G. MANCHESTER, - - - - - West Winsted  
 "The Farmer as a Business Man."

*Music.*

G. H. MERWIN, - - - - - Westport  
 "The Boy's Defense."

FRED ROSEBROOKS, - - - - - Mansfield  
 "Time and Opportunities Wasted by the Farmer."

\* W. L. ROSEBROOKS, - - - - - Mansfield  
 "The History of Agriculture in the United States."

\* C. H. VIBERT, - - - - - Meriden  
 "The Culture of Small Fruits."

A. R. YALE, - - - - - Meriden  
 "Science in Agriculture."

*Music.*

Address, - - - - - HON. MORTIMER WHITEHEAD

*Music.*

Awarding of Prizes.

Conferring of Diplomas.

Prizes amounting to \$26.00 in gold, the first \$15.00, second \$8.00 and third \$3.00, were given by the Connecticut Dairymen's

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\* Excused from Reading.



Association, to the members of the graduating class, for the best essays upon "The Care and Management of Dairy Stock," and passing the best oral examination upon the general subject of Agriculture.

George H. Merwin, won first prize ; Jas. S. Fowler, second, and H. G. Manchester, third.

The Alumni Association gave two prizes, \$10.00 and \$5.00, for the best oral examination on Practical Agriculture.

H. G. Manchester, first, and C. H. Vibert, second.

The prize of \$15.00 is again offered by the Alumni Association to the members of the class of '92, and it is hoped that the Dairy-men's Association will renew their offer also.

The Alumni Association is composed of the graduates of the school, and the annual meeting is held on Commencement Day at the school. The object of the Association is to cultivate fraternal relations, and for mutual improvement ; also to work for the highest interests of the school. The present officers of the Association are :

DR. ANDREW HYDE, President, Norwich.

J. B. PERRY, Secretary, Clark's Falls.

M. CHAPMAN, Treasurer, Center Groton.

The students maintain a branch of the Inter-Collegiate Young Men's Christian Association, and the influence going out from this organization does much to elevate the moral tone and develop a manly bearing among them.

The Winter course of Friday night lectures, for the benefit of the students and all others who may choose to avail themselves of them, was continued as usual, with the following list of subjects, the lecturers giving their services :

Jan. 16th. Prof. H. W. Conn, of Middletown, Conn , "Bacteria."

Jan. 30th. Rev. Leonard Smith, of Spring Hill, Conn., "Pots and Potters;" a description of a visit among the pottery industries of England.

Feb. 20th. Attorney W.A. King, of Willimantic, Conn., "Equalization of Taxation."

April 17th. Prof. A. W. Harris, of Washington, D. C., "The Aims of the United States Department of Agriculture."

May 25th. Prof. C. D. Woods, of the School Ex. Station, "The Fuel Value of Feeding Stuffs."

## THE LIBRARY

Now contains over 1,600 books and pamphlets, acquired by gift and purchase. With new accommodations it can be much enlarged to advantage. More books for reference in the various lines of study are needed. If not furnished by the State, may we not hope that some liberally-disposed persons will supply our want?

## READING-ROOM.

The reading-room is supplied with a considerable number of the leading agricultural papers of the United States, besides the most important daily and weekly papers of the State; almost exclusively the gift of the publishers.

## INVENTORY.

Office,	-	-	-	-	-	-	-	-	\$21.00
Library,	-	-	-	-	-	-	-	-	1,300.00
Physical and chemical apparatus and chemicals,	-								1,150.00
Natural history outfit,	-	-	-	-	-	-	-	-	145.00
Household furniture and outfit,	-	-	-	-	-	-	-	-	2,100.00
Kitchen furniture and outfit,	-	-	-	-	-	-	-	-	250.00
Provisions on hand,	-	-	-	-	-	-	-	-	122.00
Tons of coal,	145.								

## SCHOOL EXPENSES.

Text-books,	-	-	-	-	-	-	-	-	\$291.56
Books for library and stationery,	-	-	-	-	-	-	-	-	142.08
Printing,	-	-	-	-	-	-	-	-	64.20
Chemicals and apparatus,	-	-	-	-	-	-	-	-	273.29
Repairs on buildings,	-	-	-	-	-	-	-	-	51.56
Telephone,	-	-	-	-	-	-	-	-	36.15
Postage,	-	-	-	-	-	-	-	-	33.99
Freight and express,	-	-	-	-	-	-	-	-	105.21
Traveling expenses,	-	-	-	-	-	-	-	-	53.41
Other supplies,	-	-	-	-	-	-	-	-	40.00

## LABOR OF STUDENTS.

Farm labor, 9,521 $\frac{1}{4}$ hours, at 8c.,	-	-	-	-	\$761.90
Permanent improvements, 392 $\frac{1}{8}$ hours,	-	-	-	-	31.37
For school, 1,021 hours,	-	-	-	-	81.68
For boarding department, 1,754 $\frac{3}{4}$ hours,	-	-	-	-	40.38



For buildings, 887 $\frac{1}{4}$ hours,	-	-	-	-	-	\$70.98
For grading, 701 hours,	-	-	-	-	-	56.08
For experiment station, 1,220 $\frac{3}{8}$ hours,	-	-	-	-	-	97.63
Total amount earned by the students at all kinds of labor during the year,	-	-	-	-	-	\$1,140.78

Also a considerable amount of labor has been done by the students for parties living in the vicinity of the school, and for which they received the cash, hence is not included in the above summary.

#### BOARDING DEPARTMENT.

Provisions :—

Beef and pork,	-	-	-	-	-	\$578.33
Fish and Oysters,	-	-	-	-	-	162.56
Flour,	-	-	-	-	-	155.15
All other,	-	-	-	-	-	1,384.16
Fuel and lights,	-	-	-	-	-	2,095.79
Dormitory and kitchen outfit,	-	-	-	-	-	240.30
Repair of buildings,	-	-	-	-	-	236.20
Other purchases,	-	-	-	-	-	42.68
Servant hire,	-	-	-	-	-	888.30
Matron,	-	-	-	-	-	400.00
Other labor,	-	-	-	-	-	71.50

#### INVENTORY OF LIVE STOCK ON FARM NOV. 30, 1891.

##### CATTLE.

1 pair of working oxen,	-	-	-	-	-	\$120.00
11 grade cows and heifers,	-	-	-	-	-	330.00
2 thoroughbred Guernsey cows,	-	-	-	-	-	200.00
6 half-blood Guernsey heifers, 2 years,	-	-	-	-	-	150.00
2 half-blood Guernsey heifers, 1 year,	-	-	-	-	-	40.00
4 half-blood Guernsey calves,	-	-	-	-	-	50.00
1 full-blood Jersey calf,	-	-	-	-	-	15.00

##### HORSES.

1 pair of farm-horses,	-	-	-	-	-	400.00
2 driving-horses,	-	-	-	-	-	150.00

##### SWINE.

2 fat hogs,	-	-	-	-	-	36.00
1 breeding sow,	-	-	-	-	-	15.00
2 shoats,	-	-	-	-	-	16.00

## POULTRY.

38 Plymouth Rock chicks,	-	-	-	-	-	\$22.80
6 fowls, - - - - -	-	-	-	-	-	3.00
						<hr/>
						\$1,547.80

## FARM IMPLEMENTS ON HAND NOV. 30, 1891.

Aggregate valuations,	-	-	-	-	-	\$800.00
Quarry, joiners, and all other tools,	-	-	-	-	-	39.00
						<hr/>
						\$839.00

## AMOUNT AND VALUE OF FARM AND GARDEN PRODUCTS.

47 tons of upland hay,	-	-	-	-	-	\$564.00
1 ton of rowen hay,	-	-	-	-	-	12.00
6 tons of swamp hay,	-	-	-	-	-	36.00
5 tons of oats straw,	-	-	-	-	-	40.00
1 ton of rye straw,	-	-	-	-	-	12.00
2 tons of bedding,	-	-	-	-	-	8.00
1 ton of corn fodder,	-	-	-	-	-	10.00
50 tons of silage,	-	-	-	-	-	125.00
$\frac{3}{4}$ ton of squashes,	-	-	-	-	-	30.00
432 bushels of ears of corn,	-	-	-	-	-	172.80
12 bushels of parsnips,	-	-	-	-	-	6.00
15 bushels of table beets,	-	-	-	-	-	9.00
5 bushels of onions,	-	-	-	-	-	3.00
25 bushels of turnips,	-	-	-	-	-	5.00
20 bushels of tomatoes,	-	-	-	-	-	12.00
3 bushels of pickles,	-	-	-	-	-	3.00
10 bushels of pole beans,	-	-	-	-	-	7.50
183 bushels of potatoes,	-	-	-	-	-	91.50
5 bushels of sweet corn,	-	-	-	-	-	3.75
290 bushels of oats,	-	-	-	-	-	145.00
39 bushels of buckwheat,	-	-	-	-	-	27.30
16 bushels of spring rye,	-	-	-	-	-	12.00
8 bushels of pease,	-	-	-	-	-	8.00
15 barrels of apples,	-	-	-	-	-	15.00
5 bushels of pears,	-	-	-	-	-	5.00
12 bushels of grapes,	-	-	-	-	-	12.00

500 heads of celery, - - - - -	\$10.00
200 cabbages, - - - - -	10.00
2 bushels of peppers, - - - - -	2.00
250 heads of lettuce, - - - - -	5.00
500 pounds of rhubarb, - - - - -	5.00
60 bushels of asparagus, - - - - -	9.00
84 quarts of strawberries, - - - - -	8.40
219 quarts of raspberries, - - - - -	21.90
5,715 gallons of milk, - - - - -	685.80
1,481 pounds of pork, - - - - -	88.17
4,085 pounds of beef, - - - - -	228.83
120 pounds of veal, - - - - -	6.00
43 cords of wood, - - - - -	172.00
4 calves raised, - - - - -	50.00
Swine raised, - - - - -	16.00
Poultry raised, - - - - -	16.00
	<hr/>
	\$2,716.95

## LABOR ON PERMANENT IMPROVEMENTS.

## Grading around new school buildings :—

Labor of students, 1,142 hours, - - -	\$91.36
Labor of men, - - - - -	57.00
Labor of teams, - - - - -	60.50
	<hr/>
	\$208.86

## Labor on new building for poultry:—

Students' labor, 193 hours, - - -	\$15.44
Labor of men, - - - - -	12.50
Labor of teams, - - - - -	12.00
	<hr/>
	\$39.94

Removing rocks from cultivated lands, - - -	70.66
Labor, repairing and building fences, - - -	21.00
Improving highway near school buildings, - - -	6.09
Building dam and flume at pond, - - -	13.00
Improving land west from new school buildings, -	26.40
	<hr/>
	\$385.86
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## BALANCE SHEET OF FARM FOR 1891.

## DR.

Live stock on hand Dec. 1, 1890,	-	-	-	-	\$1,680.40
Farm implements, " "	-	-	-	-	775.00
" products, " "	-	-	-	-	1,042.00
Labor (student), - - - -	-	-	-	-	761.91
" (not student), - - - -	-	-	-	-	452.20
General supplies, - - - -	-	-	-	-	329.56
Fodders purchased, - - - -	-	-	-	-	262.89
Fertilizers, - - - -	-	-	-	-	57.30
Animals bought, - - - -	-	-	-	-	43.00
Farm superintendent's salary, \$600 ; board, \$342.16,					942.16
Board of farm laborers, - - - -	-	-	-	-	98.70
					<u>\$6,445.12</u>

## CR.

Live stock on hand Dec. 1, 1891,	-	-	-	-	\$1,547.80
Farm tools " "	-	-	-	-	839.00
" products " "	-	-	-	-	1,257.55
" " furnished building department, and sold,					1,357.60
" " on hand Dec. 1, 1891,	-	-	-	-	1,167.55
Use of teams for school and boarding department,	-				300.00
Labor on permanent improvements, - - - -	-	-	-	-	385.86
Sale of animals, etc., - - - -	-	-	-	-	38.67
					<u>\$6,894.03</u>
					<u>6,445.12</u>
Balance credit, - - - -	-	-	-	-	<u>\$448.91</u>

## TREASURER'S REPORT.

H. C. MILES, *Treasurer*,

*In account with* STORRS AGRICULTURAL SCHOOL.

1890.		DR.		
July	1.	By balance of account,	.	\$742.93
"	7.	By cash, B. F. Koons,	.	100.00
Aug.	8.	" " Isaac Farwell, Jr.,	.	3.84
July	14.	" " Building Committee,	.	12.60
Oct.	2.	" " Note discounted,	.	1,468.50
"	6.	" " Comptroller,	.	2,000.00
"	10.	" " Experiment Station,	.	64.10
"	11.	" " L. P. Chamberlain,	.	33.98
1891.				
Jan.	3.	" " Comptroller,	.	2,000.00
"	21.	" " Experiment Station,	.	79.87
Feb.	5.	" " Note discounted,	.	1,959.00
Mch.	9.	" " Experiment Station,	.	2.66
April	3.	" " Comptroller,	.	2,000.00
"	24.	" " Note discounted,	.	1,321.87
May	5.	" " Experiment Station,	.	56.77
June	2.	" " Note discounted,	.	1,958.33
July	2.	" " B. F. Koons,	.	200.00
"	6.	" " Comptroller,	.	1,000.00
				<u>\$15,004.45</u>

1891.		CR.		
June	30.	Paid Salaries,	.	\$3,233.99
	30.	" Provisions,	.	1,458.08
	30.	" Fuel and lights,	.	809.28
	30.	" Boarding Department,	.	77.74
	30.	" House furnishings,	.	170.90
	30.	" Books and stationery,	.	390.71
	30.	" Water rent,	.	10.00

June 30.	Paid Telephone rent,	.	.	.	\$32.00
30.	" Chemicals,	.	.	.	30.65
30.	" Buildings,	.	.	.	470.02
30.	" Farm tools and repairs,	.	.	.	94.62
30.	" Farm supplies,	.	.	.	134.40
30.	" Farm stock,	.	.	.	26.00
30.	" Feed for farm stock,	.	.	.	328.40
30.	" Farm labor,	.	.	.	446.69
30.	" Farm fertilizers,	.	.	.	57.30
30.	" Blacksmith,	.	.	.	84.05
30.	" Furnishing new Dormitory,	.	.	.	1,308.52
30.	" Insurance,	.	.	.	527.25
30.	" Notes,	.	.	.	5,000.00
30.	" Sundries,	.	.	.	269.50
					<u>\$14,960.10</u>
Balance of account, . . . .					<u>44.35</u>
					<u>\$15,004.45</u>

This will certify that we have examined the accounts of Henry C. Miles, Treasurer of the Storrs Agricultural School, for the fiscal year ending June 30, 1891, compared the vouchers therewith and find the same to be correct, and that there is a balance on said date in the hands of the Treasurer amounting to forty-four and  $\frac{35}{100}$  dollars.

GEORGE F. LINCOLN,  
D. WARD NORTHROP,

*Auditors of Public Accounts.*

HARTFORD, Dec. 10, 1891.







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1892/93

# ANNUAL REPORT

OF THE

## TRUSTEES

OF THE

Storrs Agricultural College,

AT

MANSFIELD, CONN.

(P. O., STORRS, CONN.),

1893.

---

PRINTED BY ORDER OF THE GENERAL ASSEMBLY.

---

HARTFORD, CONN. :

THE FOWLER & MILLER CO., PRINTERS AND BINDERS, 341 MAIN STREET.

1894.

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## TRUSTEES.

HIS EXCELLENCY LUZON B. MORRIS, *ex officio*, President.

*Appointed by the Board of Agriculture.*

E. H. HYDE,

STAFFORD, *Vice-President.*

*Appointed by the Senate.*

T. S. GOLD,  
HENRY C. MILES,  
WM. E. SIMONDS,  
J. M. HUBBARD,  
J. H. HALE,  
E. C. PINNEY,  
PROF. S. W. JOHNSON,

	Term Expires.
W. CORNWALL, Secretary,	1897
MILFORD, Treasurer,	1895
CANTON,	1897
MIDDLETOWN,	1897
SOUTH GLASTONBURY,	1895
STAFFORD,	1895
NEW HAVEN, <i>ex officio</i> , Director of the Connecticut Experiment Station.	

---

## EXECUTIVE COMMITTEE.

H. C. MILES,

J. H. HALE.

T. S. GOLD,

---

## AUDITORS.

E. C. PINNEY,

J. M. HUBBARD.

---

## FACULTY.

B. F. KOONS, President, Prof. of Zoölogy, Geology, and Political Science.  
A. B. PEEBLES, Professor of Chemistry and Physics.  
C. S. PHELPS, Professor of Agriculture.  
GEO. A. WATERMAN, Professor of Veterinary Science.  
H. E. WOODBURY, Professor of Horticulture.  
MISS C. J. SHORT, Professor of Domestic Science.  
C. E. DAVIS, Instructor in Wood and Iron Shop.  
MISS L. J. BARBER, Instructor in Mathematics and English.  
L. P. CHAMBERLAIN, Farm Superintendent.  
MISS M. E. WILSON, Housekeeper.

---

## EXPERIMENT STATION STAFF.

W. O. ATWATER, Director.  
C. D. WOODS, Vice-Director and Chemist.  
C. S. PHELPS, Agriculturist.  
E. B. FITTS, Assistant in Farm Experiments.

## State of Connecticut.

# REPORT.

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*To His Excellency Luzon B. Morris, Governor of Connecticut:*

The act of the last General Assembly, in making a college of the Storrs Agricultural School, has demanded enlargement and important changes in the course of instruction. New professorships have been added and the time of the full course extended to four years.

The new departments of instruction, which have been established, are Horticulture, Veterinary Science, Military Drill, Wood and Iron Work, and Domestic Science. In addition, the facilities for instruction in all the departments hitherto taught have been materially increased.

The principal changes made consist in the addition of a fourth year—for more thorough instruction in special lines of study, and those who complete the course will be entitled to a degree. The enlarged force of instructors allows more extended study in the previous years. The first year as a preparatory course is retained for those who cannot pass the examination in the common English studies that are taught in all our common schools. A knowledge of the English language, embracing reading, writing, spelling, and composition, arithmetic, geography, and history of the United States, are essential to an intelligent citizenship. Without this foundation knowledge it is useless to attempt the study of those sciences that pertain to agriculture, or more comprehensively, the science of agriculture, which embraces them all. Hence this forms an important feature of our enlarged work.

The General Assembly, in establishing the Storrs Agricultural College, provided for its maintenance by the transfer to it of the United States bounty for agricultural colleges, according to the act of Congress, 1890, now amounting to about \$20,000 per year, increasing annually till it reaches \$25,000. Though quite a liberal sum, yet it falls far short of the amount received by the larger States, and still our college is rightly expected to rank in the first class. None of these funds received from the National government can be used for buildings.

The necessities of the case have obliged your trustees to use other funds at our control for erecting a green-house for the horticultural department, but these funds are entirely inadequate to the demands for enlarged accommodations for all our departments.

Our buildings in all their parts were planned for fifty boys with their teachers. Laboratories, class-rooms, dormitories, dining-hall and kitchen were all constructed in conformity with this plan. Now, an increase of our teaching force of 100 per cent., and of the pupils in attendance this first year, has exhausted every device within our reach to accommodate them. We do not know how to provide for the incoming class. The General Assembly of 1895 will be expected to provide for these wants. In the meantime what is to be done? The life of the college depends upon its steady, continuous growth—any check now will prove a permanent burden. The only way of meeting the emergency, we can see, is in the purchase of a part of the Storrs Farm, with its ample buildings, in perfect condition, both for college and farm purposes. The ownership of this property, while vital to the present prosperity of the college, has the added claim of being a safe investment for the State. Will the trustees be warranted in this purchase, trusting that the next General Assembly will approve the act? The buildings cannot be erected for the same amount that will buy them and the land, while the latter is of the best quality and in highest condition of culture. The buildings have excellent accommodations for a dairy department, an admitted necessity of the college.

There are grave questions to be wisely met at the next annual meeting. As a Board of Trustees directed to establish and maintain an agricultural college, shall we meet the emergency with faith in the support of the State in carrying out its wishes as manifested in the acts of the last General Assembly, and in the encouragement of those interested in the progress of agriculture in the State?

For particulars, as to the management of the college, the work now in hand, and the wants of the different branches of the institution, you are referred to the Reports of the Faculty, which are appended.

Thanking you in behalf of the trustees for your special interest in this institution, and in agriculture in general, this report is

Respectfully submitted,

T. S. GOLD, *Secretary.*

## Calendar.

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The College year is composed of thirty-six weeks, divided into three terms, of thirteen, twelve, and eleven respectively.

1893.

The Winter Term began January 2d and closed March 24th. The Spring Term began April 3d and closed with the Annual Commencement, June 16th. The Fall Term began September 25th and closed December 22d.

1894.

The Winter Term begins January 1st and closes March 23d. The Spring Term begins April 2d and closes with the Annual Commencement, June 15th. The Fall Term begins September 17th and closes December 18th.

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AGRICULTURAL COLLEGE,

December 10, 1893.

*To the Board of Trustees of the Storrs Agricultural College:*

GENTLEMEN,—I have the honor to transmit herewith to your honorable body, the Annual Report of the Faculty of Storrs Agricultural College for the year ending November 30, 1893.

Respectfully submitted,

B. F. KOONS,  
*President.*

## Report of the President.

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The past year has been one of much more than ordinary interest and prosperity in the history of this institution. During no other previous twelve months of its history has there been so much to encourage its friends, and to give hope for its future, as the year just closing.

Never before has its capacity to accommodate those applying for admission and instruction been so severely taxed. At the opening of the fall term every available room was taken.

Besides a large proportion of the old students returning, the incoming class of new numbered fifty-eight. The catalogue for the year contains the names of 109 students.

Never before have we been able to meet so well, in our course of instruction, the varied wants of the pupils as during the last term of the current year.

Our enlarged facilities, enabling us to establish the departments of Horticulture, Veterinary Science, Domestic Science and Shop Work, in addition to the lines of work previously done, give a breadth and scope to our work which brings it more nearly in line with the ideal Agricultural College. For the details of the work in these several departments I refer you to the course of instruction and the reports of the various Professors.

Our course as now organized, besides giving a liberal training in science in general, in the higher years, gives some freedom of choice in the lines of study to be pursued, allowing those who desire it, to devote their energies to special work, making a specialty of horticulture, or agriculture, or veterinary science, etc., to suit the bent of the individual mind.

At the close of the school year in June, Mrs. C. E. Hilliard as matron and Miss J. Nettleton as teacher, after five years of faithful service, handed in their resignations, and the places thus made vacant, together with the new departments established, made it necessary to find five new officers for the school.

After due search, the following were employed: Dr. George A. Waterman, a graduate of Michigan Agricultural College and Chicago Veterinary School, was engaged as Professor of Veterinary Science, also drill master in the military department.

Miss C. J. Short, a graduate of Kansas Agricultural College, as Professor of Domestic Science. Also Miss Short assumed general charge of the boarding department here, with a housekeeper to assist her.

Miss L. J. Barber, a graduate of the New Britain Normal School, was engaged to succeed Miss Nettleton as instructor in Mathematics and English.

Mr. H. E. Woodbury, a graduate of Massachusetts Agricultural College, and an assistant in their horticultural department, was engaged as Professor



of Horticulture, and Mr. C. A. Davis, a graduate of Worcester Polytechnic Institute, having had several years' experience as a teacher in these lines, was secured as instructor in mechanical and free-hand drawing, and wood and iron shop.

At the opening of the fall term in September all the new instructors were on hand to take up the duties of their respective departments; and the more we see of the development of the work of our enlarged plans, the more confident we are of their ultimate success, as adapted to meet the wants of a large number of young people in the State.

The number of pupils has outgrown our dormitory and dining-room accommodations. In the construction of the new dining-room, kitchen, and pantries, plans were made for fifty people; but during the fall term they have been compelled to provide for some seventy-five, which has overtaxed their resources to the utmost. They could easily stand such an overcrowding of the dining-room for a few meals on special occasions, but to continue it for the whole school year is asking too much of those in charge of that department. I beg to suggest that at an early date it will be desirable to establish another boarding club in other quarters; restricting each to fifty persons, or provide larger kitchens and dining-hall for the whole body of students. I am of the opinion that fifty in the club would be the better plan.

In order to extend the benefits of the College and to make it of the largest value to agricultural interests of the State, it is proposed to establish an extension course of home study, for those who desire to take up a systematic course of reading along the lines pursued at College.

A committee of the faculty has the matter in hand, and will issue a prospectus in time to arrange for classes the coming fall. All inquiries on the subject should be addressed: Extension Department, Storrs Agricultural College, Storrs, Conn.

After the plan of enlargement of the work, made possible by the acts of the General Assembly, had been decided upon, the following outline in substance was published and distributed:

#### REVISED AND ENLARGED COURSE OF INSTRUCTION.

By the vote of the General Assembly of the State, the Storrs Agricultural School was changed to the Storrs Agricultural College, and opened to young ladies as well as to young men. This necessitated and made possible considerable modification and improvement in the course of instruction.

In addition to what has formerly been taught in the School, four new departments are to be introduced—Horticulture, Veterinary Science, Domestic Science, and Work in Wood and Iron.

The following plan has been adopted to meet the necessities of the students. The first year (see Schedule of Studies) is provided for those who have not had complete advantages in the common schools.

Those who are able to pass an examination in Arithmetic, English, United States History and Geography, can have the chance of a short or a long course,—the short covering the work of the second and third years, in which the elements of the subjects will be taught, very similar to that of



the School in past years, only much improved by adding Horticulture, Veterinary Science, more training in English, etc., etc., while the long course will include all of the short, and, at present, one year in addition, the fourth of the schedule.

The short course is to meet the wants of those who have neither the means nor the time to study longer, yet who desire the elements of an education.

The longer course is to accommodate those who have the ambition and means to go further, and who desire to do a much higher grade of work, and thus secure a more complete education. In the near future it is planned to expand this long course into four years, and allow considerable choice of work, at least in the last year of the course, so that those who desire to make a specialty of any subject, such as Agriculture, Horticulture, or Veterinary Science, for example, may give their time almost exclusively to their chosen work, at least during the last year.

Those who take the short course will receive a certificate at its close, the same as from the School in past years, but those who take the long course will be graduated with a degree.

#### SCHEDULE OF STUDIES.

*First Year.*—Arithmetic, Grammar, Physical Geography, United States History, Penmanship, Elocution, Music, Military, Sewing, Physical Culture.

*Second Year.*—Agriculture, Horticulture, Veterinary, Chemistry, Botany, Algebra, English, Penmanship, Drawing, Singing, Military, Sewing, Cooking, Physical Culture.

*Third Year.*—Agriculture, Horticulture, English, Book-Keeping, Agricultural Chemistry, Organic Chemistry, Botany, Physical Culture, Sewing, Cooking, Physics, Political Economy, Entomology, Geometry, Surveying, Military, Meteorology.

*Fourth Year.*—Horticulture, Agriculture, Veterinary, Landscape Gardening, Botany, Zoölogy, Physical Culture, Sewing, Cooking, Geology, Chemistry, Meteorology, Science of Government, English, Military, Sanitation.

The new departments will include the following outlines:

#### HORTICULTURE.

The work will include the study of Botany, Fruit Culture, Market Gardening, Landscape Gardening, Floriculture, and Forestry.

Botany will be treated under the three heads of structural, analytical, and economic botany.

Market Gardening will be a study of the different crops included under this head, and the best methods of cultivating and marketing them.

Fruit Culture will be the study of the requirements of the markets, the best varieties for this section of the country, and the manner of raising them. This will also include a careful study of the means for successfully contending with their insect and parasitic foes.

Forestry and Landscape Gardening, it is hoped, can be applied to some extent in practical work upon the College grounds.

Floriculture will be studied from the financial and ornamental stand-

point, and for the furtherance of this work a green-house will be erected on the grounds this fall.

It is desired to make the course in Horticulture thoroughly practical, and suited to the conditions of the State of Connecticut.

#### VETERINARY SCIENCE.

The course of instruction in the veterinary department will include the study of the anatomy of the lower animals. The horse will be taken as the type, and the differences in the other animals will be noted. The minute structure of the bones will be studied, also the position of the various bones of the skeleton, and the characteristics peculiar to each bone. The anatomy of the digestive, respiratory, and various other systems will be considered. The position of muscles, their origin, insertion, and their actions in the movements of the body.

Near the close of the fall term, the students will be required to dissect a subject, at which time they will more thoroughly fix in their minds the principles that have been taught. The remaining two terms of the year will be devoted to the study of the various diseases to which the lower animals are subject, and the drugs used in combating these diseases.

In the study of the diseases, the symptoms by which they are recognized will be considered, the pathological condition produced by them, and the line of treatment to be used in overcoming the disease.

In the study of medicine the most important drugs used will be described, the source from which they are obtained, their physiological actions, and the diseases in which their use is indicated ; also the amount to be given at a dose.

The course in physiology will consist in a description of the anatomy of the human body, also the study of the functions of its various organs, the laws of health, etc.

#### MILITARY SCIENCE AND TACTICS.

This department will teach the various positions taken by the soldier. Besides obtaining the excellent physical results which flow from a systematic and regular military training, habits of neatness, promptness, and obedience, will be inculcated.

#### HOUSEHOLD ECONOMY

Is best taught by lectures, combined with actual work in cooking. Sewing is taught in all its departments.

Care of the sick, health of the home, physical culture, everything pertaining to the comfort of the family, will receive due attention.]

Where the studies of the general course are not suited to the wants of the young ladies, the studies in Domestic Science will be substituted.

Good, comfortable rooms are provided for the young ladies, who will be under proper supervision, and the best of facilities are provided for all who wish to secure a good education at a moderate cost. Facilities will be afforded to those who wish to pay a part of their way by suitable household labor.

## SHOP WORK.

Care and use of tools, carpentry, wood-work, machinery, blacksmithing, etc., such as is needed on every farm, will be the line of instruction here given.

## DEPARTMENT OF ENGLISH.

Recognizing the need of a thorough education in English, a good deal more stress is to be laid upon that subject throughout the whole course.

Declamation, elocution, orations, discussions, essay writing, and all forms of work that will give facility in the use of our mother tongue, will be a very prominent feature in this department of the College work.

## AGRICULTURE.

*History of Agriculture.*—The agriculture of ancient countries is reviewed briefly, followed by the history of English agriculture, and concluded by the history and development of the United States.

*Farm Management.*—The arrangement of farm buildings and stables, for convenience and economy, the "laying out" of fields, fencing, rotation of crops, etc.

*Farm Crops.*—A general study of farm crops; their origin, value, and uses; methods of planting, cultivating and harvesting, and their adaptation to soils and climates.

*Soils, Tillage and Manures.*—Under this heading comes the study of soils; their origin, classification, chemical and physical properties, and their improvement by means of drainage, tillage, etc. The merits of different farm implements and tools, and the importance of thorough tillage, is carefully considered. This is followed by a study of all home supplies of fertilizing materials, the care and management of manures, their application, and the relative values of different cattle foods for manure.

*Breeding and Breeds, Dairying.*—Later in the course much time is occupied with a study of stock-breeding, breeds of live-stock; the feeding, care and management of different classes of live-stock; dairying, including milk-testing, and the care and management of dairy products.

*Fertilizers and Their Use.*—Under this subject is included a study of the different kinds of fertilizing materials; their sources, composition, value for different crops and soils, and the study of soil-testing with different fertilizers.

## CHEMISTRY

receives much attention, the work extending well through the course, because the science enters so largely into every-day life; its principles being extensively employed in the selection of commercial fertilizers, and the wisest and best use of these and the home-produced; the kinds of soil to which they are applied and the crops they are to grow; also into the business of feeding and rearing of animals, hence the chemistry of feeding and food stuffs, and the principles of the science as employed in the dairy, the kitchen, and the business of life generally.

## GEOLOGY, ENTOMOLOGY,

Biology, Physics, Mathematics, and other subjects calculated to give a well rounded, complete English education, will receive their share of attention.

## REPORT OF PROF. PEEBLES.

*To the Honorable Board of Trustees, Storrs Agricultural College :*

GENTLEMEN,—The work of the past year has been delightful by reason of the hearty interest taken by the students in the subjects upon which I have given instruction.

During the winter term of '93 the Senior Class gave four hours a week to laboratory work in quantitative analysis of fertilizers, bones, ashes, and farm products. A new analytical balance was greatly appreciated by the class, enabling them to do more and better work. In the study of English, one hour a week was given to composition and criticism, and to the study of standard authors. Two hours a week study of Trigonometry, and a start in surveying, made up the Senior mathematics for the term. One hour a week to study of vocal music. Largely from the membership of the Senior Class was organized a Glee Club, that furnished music for various evening entertainments. This required considerable extra work, but was felt to be well worth the effort. The "singing farmers" are not yet prepared to "hang their harps on the willows."

During the spring term the Senior Class gave three hours per week to Agricultural Chemistry. In Surveying, the term was employed in outdoor actual surveys; the theoretical work was finished the previous term. Each student served in all the positions of a regular survey party. From his notes as compass man, each member platted and calculated the area of a field on college farm, or some farm near. All became familiar with the leveling instrument. Several surveys were made by members of the class for farmers in this region.

The Middle Class gave three hours a week during the winter term to qualitative analysis and laboratory work. This is a busy period, and very satisfactory work is accomplished, considering the brief time given to so large a subject. Physics was continued from the previous term for five weeks. The remainder of the term three hours a week were given to the subject of Meteorology. This class received a brief course of ten lectures on Landscape Gardening. One hour per week was given through the spring term to Free-hand Drawing. Also one hour's instruction in Vocal Music.

The opening of the new school year in September made necessary several changes in the usual order. The present Fourth Year class meet twice a week for the study of English. In prose composition we have taken up a volume of essays by George William Curtis, alternating with an hour in study of Tennyson—*Enoch Arden* and *In Memoriam* being specially examined. The largely increased attention given to the study of English is appreciated, I believe, by all the class, who have certainly made good progress. This work has been divided between Professor Woodbury and myself. Our numerous duties in other lines make it of necessity a divided interest we give to the subject. Its importance and the eagerness with which the young men respond to the efforts put forth on their behalf, make it more certainly manifest that there should be a thoroughly equipped English department, in charge of a competent instructor, who can give his



undivided attention to the subject. The Third Year class have two hours twice a week, for the term in Organic Chemistry, mostly laboratory work, using Remsen's text-book. In Mathematics we have two exercises a week in Geometry. One hour a week for English, continuing through the year. The Second Year class take up the study of Chemistry, with two exercises a week. Owing to the size of the class, it has not been possible, with the present supply of apparatus, to provide the usual laboratory work in making and manipulating gases. The lecture-room is crowded beyond its capacity. To provide table room next term for work in qualitative analysis will require enlarged equipment.

Very respectfully,

A. B. PEEBLES,

*Department of Chemistry and Physics.*

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REPORT OF PROF. PHELPS.

*To the Trustees of the Storrs Agricultural College:*

GENTLEMEN,—The extension of the course from three to four years has made it possible to expand the work in Agriculture, and to cover more ground than heretofore. The regular routine has been somewhat disturbed by these changes, as studies that have already been pursued by a part of the classes have been placed farther along in the course. It will require one or two years for the work to become adjusted to the new conditions.

Studies like Cattle Feeding and Stock Breeding, requiring a considerable knowledge of chemistry, animal anatomy and physiology, for their best understanding, have been placed in the last year of the course. This has been done with the belief that the principles of science as applied to agriculture will be more easily comprehended after the elementary sciences have been studied.

As now planned, the courses in Agriculture cover three years, as follows:—Beginning with the fall term, the Second Year class are given lectures on the History of Agriculture, the Arrangement of Farm Buildings and Fields for Convenience and Economy, Marketing, and Rotation of Crops. During the winter term comes a study of Soils, Tillage, and Manures, and for the spring term a text-book on Farm Crops is used.

The work of the Third Year class for the fall term consists of a series of lectures on the Care and Management of Live Stock, including a study of the leading Breeds of Cattle. This is followed during the winter term by a course in Dairying, and a brief course in Poultry Culture, and for the spring term the class takes up a study of Fertilizers, their Preparation and Use.

Beginning with the fall of 1894, I have planned to take up, with Fourth Year class, the study of Stock Breeding, and for the winter term the Science and Practice of Cattle Feeding. It is hoped that a portion of the year may also be given to the study of Experiment Station reports and bulletins.

In order to make the work in Agriculture of highest value to the students, the practical work of the farm should supplement that of the class-room.

A student may study the laws of science for years, but unless he has an opportunity to see the practical application of these laws, he is not impressed with their value; but if the student sees the class-room instruction practically illustrated in the operations of the farm, the lessons make a more lasting impression.

Much of the work of the farm is already a source of instruction to the students, but there are two studies in the course, as here outlined, that especially need to be supplemented by practical work. A dairy room or building should be provided and equipped, where instruction can be given in the care and handling of milk, cream, and butter. The important place dairying holds in our system of farming is a sufficient argument for urging our wants in this direction. The increased use of fertilizers in our State, and the fact that the needs of soils and crops vary so widely, makes it important that instruction should be given in the preparation and use of home-mixed fertilizers. Facilities should be afforded the instructor in agriculture for giving practical lessons in these very important subjects.

In connection with the work of preparing the Connecticut Crop exhibit for the Columbian Exposition, I have been able to get duplicate samples of corn, rye, oats, wheat, barley, and dried grasses, so that a good collection of these products is now available for class-room illustration. This is a valuable addition to the department at no expense to the College.

The World's Fair Board of Managers have turned over to the College all portions of the Crop and Forestry exhibits that we desired; and several purchases of rare ancient implements were made at the Fair, with funds contributed by friends of the institution. This is only a beginning, however, and it is hoped that a small expenditure may be made each year by the College, in the purchase of the many facilities needed for illustration in this department.

Respectfully submitted,

C. S. PHELPS,

*Department of Agriculture.*

#### REPORT OF PROF. WATERMAN.

*To the Board of Trustees of Storrs Agricultural College :*

GENTLEMEN,—As this is the first year for the department of Veterinary Science at this College, the report will of necessity be limited.

It has been my pleasure for the past two months to meet the students, as follows : The Fourth Year for one hour each day in Veterinary Science ; the Third Year one hour, three days in the week, in Veterinary Science. The Second Year students I have met in Veterinary two days each week, and the remaining three days have met them in Physiology.

As the first essential of a good engineer or machinist is that he understand the parts of his engine or machine, and also the uses of these parts, so the person who intends to be around, or handle animals, either in health or disease, should understand the structure and uses of the various parts of the animal economy. Viewing the subject from this standpoint, our study for this term has been the anatomy of the lower animals. As there are no text-books suited for our work, the instruction has been given by means of

lectures. The horse has been taken as the type, the differences in the other animals being noticed from time to time, special attention being paid to the differences in the ox. By the time this report shall have reached you we shall have completed our study of the anatomy. We will then go to the dissecting room and more firmly fix in our minds the principles already taught, by seeing with our own eyes the parts studied. The remaining terms of the year will be spent in considering the diseases common to our domesticated animals; how to ward off or alleviate these diseases; the medicines used; also the hygiene.

Each Saturday, at 11 o'clock, we have free clinics, at which time anyone bringing lame or otherwise affected animals to the College will receive such advice as we may be able to give, free of charge. The object is that the students may see as many cases of disease as possible, and also the methods of examining an animal in finding out the part affected with disease.

In Physiology we use as a text-book "Martin's Human Body." This considers to quite an extent the anatomy, physiology, and hygiene of the human body, paying special attention to the effects of alcohol and narcotics upon the system.

It has also been my pleasure to meet the students in military drill. The students are divided into two companies, each company drilling one hour alternate afternoons. We take as our guide the "Infantry Drill Regulations of the United States Army," as adopted in 1893. Each student is provided with a gun and its necessary equipments. More than one-half of the students have ordered military uniforms, and a large part of the remaining ones will order before the weather is suitable for outdoor drill in the Spring. The great object of the work is to give to each student that grace and ease of movement which will throughout all coming life mark him as a man of refinement.

Respectfully submitted,

GEO. A. WATERMAN,  
*Veterinary Department.*

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#### REPORT OF PROF. WOODBURY.

*To the Trustees of the Storrs Agricultural College:*

GENTLEMEN,—I have the honor to submit to you the following report in regard to matters pertaining to the horticultural department. As this is the first year of its existence, it will necessitate, in description, the more frequent use of the future than of the past tense.

#### INSTRUCTION.

The full course embraces a thorough consideration of Botany, Market-Gardening, Landscape Gardening, Floriculture, and Forestry. The aim has been to give to those taking the shorter course more elementary instruction under these various heads, and with those taking the full course to go into detail to as great an extent as the time allotted will permit.

Class-room instruction is given by lecture, or text-book, as the subject requires, and practical instruction by class work in the field.



## EQUIPMENT.

*Green House.* A three-quarters span green house, 20×75, built of cypress stock throughout, has been erected this fall, and a boiler-house, 20×20, two stories high, with good cellar, for boiler and coal. Steam heat seemed desirable, and a thirty horse-power second-hand upright was used for this purpose.

The heating capacity of this boiler is considerably in excess of that needed by a house of the present size, thus giving an opportunity to enlarge the roof area without increasing the heating apparatus. Water for the house is obtained by gravity from the main tank, and also a reserve supply by vacuum pump from the ice pond near by. The first floor of the boiler house is for a work room, and the second floor is divided into two bed-rooms and a study, to be occupied by two students having charge of the fires.

As this is to be a general purpose house, for the present, at least, it will be divided into three sections. The first, to be used for a forcing house, the second, for flowers, and the third, for vegetables. The delay in getting into the house makes it desirable, for this season, to devote the entire house to the raising of early vegetables, and of foliage plants, for the summer ornamentation of the College grounds.

It is intended in the future to have in this house plants to illustrate the principles of structural, systematic, and economic botany, together with the leading plants for house culture, cut-flowers, and for outdoor ornamentation.

Instruction will be given in methods of propagation, cultivation, training, varieties, etc., each student being required at some time in the course to do all the different kinds of work in this department.

*Fruits.* The equipment in this line is not in any case extensive, or with regard to varieties, sufficiently complete. It at present consists of not over three or four acres of apples, pears, plums, peaches, cherries, and quinces, for large fruits; and raspberries, blackberries, strawberries, currants, and grapes, for small fruits. These are all suffering for the want of fertilizers. New and larger lots of fruits will be set out as soon as possible, giving opportunities for instruction in methods of planting, training, pruning, cultivation, study of varieties, gathering, packing, and marketing.

An effort will be made to test all the new varieties of large and small fruits, and such of the vegetables and flowers as may be sent for trial. The testing of *all* in a comparative way is of value to people who can afford neither the time nor the money necessary for the work, and is also of value for class illustration.

*Nursery.* There is at present no nursery, but a nucleus for more extensive operation will be started at an early date, where with trees, shrubs, and vines in various stages of growth, the different methods of propagating by cuttings, layers, budding, grafting, pruning, and training of young trees will be practically taught by class work.

*Garden.* Nearly all the kinds of garden and farm-garden crops have been grown, but only in quantities sufficient to fill the requirements of the Boarding Department. This furnishes illustration of the treatment of all market-garden crops, but it seems desirable to increase the amount in order

to give special attention to the selection of varieties, the growth of the seed, the preparation for market, and the marketing.

*Forestry.* Some acres of the College land are covered with a growth of young trees, which will afford an opportunity for the present illustration of the methods of pruning forest trees, and the management and preservation of forests.

There are, however, but few kinds in these groves, and it would seem desirable to make plantations of ornamental trees, shrubs, and flowering plants in various parts of the College grounds, grouped in such a way as to afford as much instruction as possible in the art of landscape gardening, and have them all distinctly labeled with the common and scientific name, thus serving for illustration and for reference. The advantages for the study of trees of Connecticut are exceptional, in consequence of the College having received as a present the entire World's Fair exhibit of trees of Connecticut, and also by the possession of a wild garden, started a year or two since, and containing specimens of many trees native to Tolland County. This affords a most excellent foundation for a collection which shall embrace all the trees which are natives of the State.

One of the most desirable portions of the land for this department is the large swamp east of the farm barn.

This swamp, with systematic underdraining, could be made the most valuable piece of land on the College farm, as it is entirely free from stones and is almost entirely made up of vegetable mould. The imperative necessities of this department, however, are a large amount of fertilizers and manures to put the orchards, fruit plantations, and garden land now under cultivation in proper condition for the best results, and tools and horses with which to increase the acreage under cultivation, and to properly care for what is already under way.

In the past we have been favored by the courtesy of the other departments with the use of horses and implements when assistance has been needed, but the calls invariably come at a time when they can least be spared. In the spring the need of assistance will be greater and will cripple the asker if not received, and the giver if the request is complied with.

Outside help is at all times precarious, and in order to insure the success and make the work accomplished by this department what it should be, absolute independence of others in these directions is indispensable.

Respectfully submitted,

HERBERT E. WOODBURY,

*Department of Botany and Horticulture.*

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REPORT OF MISS SHORT.

*To the Trustees of the Storrs Agricultural College:*

GENTLEMEN,—This being the first year the College is opened to young ladies, the work of the Domestic Science Department has been to a great extent the preparation for future work. I have met the young ladies of the

Second Year class one hour a day in sewing and physical culture during the fall term, while the winter and spring terms will continue the work of the fall term with the addition of cooking one hour per day in the Kitchen Laboratory and one hour of class lecture work on the same subject.

In sewing, a girl brings her own material, and the teacher helps her plan, and teaches her how to make her own garments; or the department furnishes material and teaches plain hand sewing until the pupil is proficient in this, when plain machine sewing is taught. After these are mastered, almost any kind of fancy work requiring the use of needle and fingers may be taken up. A straight line system of cutting and fitting is taught each pupil, who wishes to learn to cut and fit, when she has become proficient in plain sewing. The young ladies are each making a dress for their use in physical culture. Besides this, they have made up sixty yards of material into tray clothes, kitchen towels, servants' aprons, waiters' aprons, sash curtains, and sheets for the boarding department, and fifteen yards of material into caps and aprons for the boys of the mechanical department, thus giving them a practical knowledge of what may be needed every day.

Care of the sick, health of the home, etc., receive due attention, while in physical culture an hour each day is given to the perfecting and building up of strong, healthy bodies with such exercises as are best suited to their needs.

Cooking is best taught by lectures, combined with actual work in cooking. The lectures cover something of the chemical composition of foods, the production, preparation for the table, and the use to which that particular food is put in building up the body. The subjects of marketing and of table service are given their share of time. The cooking covers actual work at the cooking table. The substantials of every day living are given the prominent place; but as pupils become able they are given practice in preparing the dainties of the table. The reasons why food is prepared in certain ways are brought out, and each girl has an opportunity not only to cook a dish, but to cook that dish and serve it as well. Aside from the work of my department, I have the care and oversight of the boarding department. The increased number of students make more work in dining-room and kitchen, and our accommodations are small as compared to the number for which work must be done. We have enlarged our facilities for cooking in the kitchen by the purchase of a new range, which makes the work somewhat lighter and easier. We employ student help in the dining-room, and by doing so students may in part defray their college expenses. At the beginning of the school year the fall fruits were gathered and preserved for future use, and were added to the already well-filled fruit room. Provisions are bought at wholesale, and by doing so we save something on all purchases. The board has been cheaper than that of any previous year.

Respectfully submitted,

CHARLOTTE J. SHORT,

*Department of Domestic Science.*

## REPORT OF C. A. DAVIS.

*To the Trustees of Storrs Agricultural College :*

GENTLEMEN,—A mechanical department has been inaugurated. A start has been made, in a small way, and with limited means ; but it is a start, nevertheless. The partitions in that part of the old dormitory which was once the chemical laboratory, have been removed, and the room, thus enlarged, ceiled with southern pine. Ten substantial benches were constructed by the students, and placed therein. Each bench is equipped with a horse, a vise, and set of twenty-five carpenters' tools. As the space was limited, only a small amount of machinery was added. This includes a forge, anvil, two machinists' vises, a drill, jig-saw, and grindstone. A good foot-power iron and wood lathe is needed, and will probably be added another year.

The course of training aims to give the boys practical information concerning the cost of carpenters' tools, the proper use of same, how to sharpen them and to keep them sharp ; the value and properties of the common woods ; also, how to repair or mend, as well as to manufacture articles. Later, the value and properties of iron and steel are investigated. The boys learn to draw out, upset, weld, drill, cast, and turn metal. Useful objects are used as lessons, viz. : rings, hooks, chains, tongs, cold chisels, and horseshoes. Along with his wood and iron work the student receives instruction in making sketches and working drawings, which he needs in the shop. The Seniors and Juniors also draw machinery and house plans.

Drawing is taught in the Microscopic room, which has been fitted up for this purpose. Each student furnishes his own drawing-board and set of instruments. The amount of time devoted to each branch may be found by referring to the schedule on another page.

The need of instruction is seen in the careless manner in which the tools have been kept, and the scarcity of good assistants for either repair or job work.

It is hoped that at the close of the school year, and also at the State Fair next fall, a creditable showing may be made of the year's labor.

The boys seem to enjoy the work, and, with few exceptions, are making the most of their opportunities.

Respectfully submitted,

C. A. DAVIS,

*Instructor in Wood and Iron Work.*

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REPORT OF MISS BARBER.

*To the Trustees of Storrs Agricultural College :*

GENTLEMEN,—The studies prescribed for the First Year class are Arithmetic, English, Penmanship, Elocution, Physical Geography, and United States History. The first four subjects continue through the year, while the remaining two occupy a half-year each.

It has been necessary to give careful drill in fractions, decimals, and percentage, to prepare for the more advanced work in arithmetic.



The work in English has been divided into technical grammar and language. Feeling that the latter is of more practical importance than the former, it has received more attention. It has been based upon the Physical Geography and the subject matter of reading.

Penmanship has been based upon the principles usually employed in that art. The individual letters have been studied in groups, with reference to their relation to each other.

It has seemed best to combine other subjects with the reading. Shaler's Geology has been used as a reader, and some of Hawthorne's works. Other literature will be studied through the remainder of the year, and perhaps some elementary work in Ethics—duty, right, honesty, etc.

Since Physical Geography is based upon chemistry, physics, and geology, parts of these subjects have been studied objectively. The lessons thus learned formed a foundation for the study of the text-book, Maury's Physical Geography.

The time given to the Second Year class has been divided between English and Penmanship. The Penmanship has been similar to that of the First Year class. The English has comprised reading and language work. The reading matter has been similar to that of the First Year class, but more extensive. The language work has been more original, though based upon the reading matter. A portion of the time allotted to English and Penmanship will be given to Algebra during the remainder of the year.

Owing to the change in the schedule, and of the length of the course, no bookkeeping will be taught this year.

Respectfully submitted,

L. J. BARBER,

*Instructor in Mathematics and English.*

## Catalogue of Students for the Year 1893.

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### CLASS OF '93.

Ernest T. Beard,	Milford, New Haven Co.
Walter H. Bishop,	Clintonville, New Haven Co.
Charles Brimble,	Torrington, Litchfield Co.
Fred W. Darnstaedt,	Hartford, Hartford Co.
William B. Dayton,	Plantsville, Hartford Co.
Walter M. Dunivan,	Hartford, Hartford Co.
Charles W. Eddy,	Simsbury, Hartford Co.
Edward B. Fitts,	E. Windsor Hill, Hartford Co.
William J. Frey,	Suffield, Hartford Co.
Martin M. Frisbie,	Southington, Hartford Co.
Harvey C. Harrison,	Northford, New Haven Co.
Frank C. Osborn,	Litchfield, Litchfield Co.
Hibbard M. Parker,	So. Coventry, Tolland Co.
Homer G. Sperry,	Bolton, Tolland Co.
Walter A. Warren,	So. Coventry, Tolland Co.

### FOURTH YEAR.

Charles Brimble,	Torrington, Litchfield Co.
Seth H. Buell,	Plymouth, Litchfield Co.
John C. Frisbie,	Southington, Hartford Co.
Harvey C. Harrison,	Northford, New Haven Co.
Hibbard M. Parker,	So. Coventry, Tolland Co.
Walter F. Schults,	Hartford, Hartford Co.
Herbert E. Warner,	East Haven, New Haven Co.
Walter A. Warren,	So. Coventry, Tolland Co.

### THIRD YEAR.

Francis A. Bartlett,	Simsbury, Hartford Co.
Hobart J. Brockett,	Montowese, New Haven Co.
Daniel Dunivan,	Hartford, Hartford Co.
George L. Fish,	Mansfield, Tolland Co.
Charles R. Green,	Hartford, Hartford Co.
George R. Hall,	Waterbury, New Haven Co.
William A. R. Hawley	New Canaan, Fairfield Co.
James B. Palmer, Jr.,	Jewett City, New London Co.
Arthur J. Pierpont,	Waterbury, New Haven Co.
Louise J. Rosebrooks,	Storrs, Tolland Co.
Arthur E. Shedd,	Preston City, New London Co.
Anna M. Snow,	Storrs, Tolland Co.

William A. Stocking Jr.,  
Nellie L. Wilson,;

Weatogue, Hartford Co.  
Mansfield, Tolland Co.

## SECOND YEAR.

Howard G. Barber,	Union, Tolland Co.
Neil F. Bliven,	Baltic, New London Co.
Fred E. Chapman,	Bridgeport, Fairfield Co.
Olive N. Clark,	Saybrook, Middlesex Co.
Albert E. Coles,	Rockfall, Middlesex Co.
Frank R. Cramer,	Plainville, Hartford Co.
Clayton T. Curtis,	East Glastonbury, Hartford Co.
Robert J. Dickinson,	Westville, New Haven Co.
Sherman W. Eddy,	Simsbury, Hartford Co.
John H. Evans,	Thompson, Windham Co.
Robert C. Fenton,	Willimantic, Windham Co.
Charles S. Francis,	Newington, Hartford Co.
Ethel E. Freeman,	Spring Hill, Tolland Co.
Robert W. Gardner,	Spring Hill, Tolland Co.
Charles E. Gaylord,	Bristol, Hartford Co.
Stancliff Hale,	So. Glastonbury, Hartford Co.
Eugenia M. Hanks,	Spring Hill, Tolland Co.
Leunett E. Hanks,	Spring Hill, Tolland Co.
Charles E. Hitchcock,	Southington, Hartford Co.
George A. Hunn,	Hartford, Hartford Co.
Arthur C. James,	No. Windham, Windham Co.
Robert R. James,	Danielsonville, Windham Co.
Charles E. Keeney,	No. Coventry, Tolland Co.
Frank E. Lathrop,	Danielsonville, Windham Co.
Ida M. Lee,	East Granby, Hartford Co.
Thomas J. Lee,	East Granby, Hartford Co.
Fred D. Loomis,	Liberty Hill, New London Co.
Marie E. Lucchini,	Meriden, New Haven Co.
H. L. Mack,	Watertown, Litchfield Co.
George C. Manchester,	Bristol, Hartford Co.
Robert C. Manchester,	Bristol, Hartford Co.
Herbert V. Paine,	New Hartford, Litchfield Co.
Herbert W. Palmer,	Montowese, New Haven Co.
Frederick B. Parker,	Gurleyville, Tolland Co.
Bessie A. Parker,	So. Coventry, Tolland Co.
Lucian Parker,	So. Coventry, Tolland Co.
Harry W. Potter,	Glastonbury, Hartford Co.
Effie M. Royce,	Gurleyville, Tolland Co.
Genevieve M. Royce,	Gurleyville, Tolland Co.
Grace E. Snow,	Storrs, Tolland Co.
Arthur H. Sturdevant,	Bridgewater, Litchfield Co.
John L. Thurlough,	Deep River, Middlesex Co.
Edward B. Townsend,	Meriden, New Haven Co.
Leroy M. Tucker,	Middletown, Middlesex Co.



Albert B. Tyler,  
Francis Von Tobel,  
Ernest H. Waite,  
Mary E. Warren,  
Jesse Whitaker,  
James M. Whittlesey,

Middlebury, New Haven Co.  
Harwinton, Litchfield Co.  
Middletown, Middlesex Co.  
So. Coventry, Tolland Co.  
Ashford, Windham Co.  
Morris, Litchfield Co.

## FIRST YEAR.

Dora A. Atwood,  
Elton D. Atwood,  
Harry E. Atwood,  
Edith M. Carpenter,  
Grace E. Colburn,  
Susie A. Colburn,  
Albert G. Cote,  
Mattie Farrell,  
Willie R. Goodell,  
Joseph R. Gridley,  
Charles N. Hart,  
Irwin H. Hutchinson,  
Lottie Hutchinson,  
Everell James,  
John M. Jewett,  
Victor E. Lucchini,  
Harry B. Luce,  
Irving H. Mansfield,  
Jerry Meaher,  
John H. Nye,  
George L. Rosebrooks, Jr.,  
William M. Stevens,  
Benjamin S. Taylor,  
Charles P. Warner,  
Edward Warren,  
Theodore Well,

Thomaston, Litchfield Co.  
Thomaston, Litchfield Co.  
Kensington, Hartford Co.  
Woodstock Valley, Windham Co.  
Storrs, Tolland Co.  
Storrs, Tolland Co.  
Baltic, New London Co.  
Storrs, Tolland Co.  
Staffordville, Tolland Co.  
Southington, Hartford Co.  
Southington, Hartford Co.  
Hartford, Hartford Co.  
Andover, Tolland Co.  
Danielsonville, Windham Co.  
Granby, Hartford Co.  
Meriden, New Haven Co.  
New Britain, Hartford Co.  
No. Haven, New Haven Co.  
Vinton's Mills, Hartford Co.  
So. Glastonbury, Hartford Co.  
Storrs, Tolland Co.  
Newington, Hartford Co.  
Hartford, Hartford Co.  
Andover, Tolland Co.  
Storrs, Tolland Co.  
Waterbury, New Haven Co.

## Course of Instruction for the Current Year.

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In the following schedules, the young men of the several classes take the Military Drill, Veterinary Science, Agriculture, and Carpentry alone, and the young women the work in Sewing, Cooking, and Physical Culture. In all other studies they recite in the same classes.

For a more detailed account of the work see the reports of the Professors and Instructors in the various departments. (Numerals denote the number of lessons per week, which are forty minutes in the first year, and one hour in all the others.)

### FIRST YEAR.

Fall Term — Physical Geography, 5; Arithmetic, 5; English, 5; Penmanship, 3; Elocution, 2; Singing, 1; Military Drill,  $2\frac{1}{2}$ ; Sewing, 5; Physical Culture, 5.

Winter Term — Arithmetic, 5; English, 5; Penmanship, 3; Physical Geography, one-half term, 5; United States History, one-half term, 5; Elocution, 2; Singing, 1; Military Drill, 2; Sewing, 5.

Spring Term — Arithmetic, 5; United States History, 5; Penmanship, 3; English, 5; Elocution, 2; Singing, 1; Military Drill,  $2\frac{1}{2}$ ; Sewing, 5.

### SECOND YEAR.

Fall Term — Human Physiology, 3; Veterinary Science, 2; Penmanship, 2; English, 2; Horticulture, 2; Chemistry, 2; Agriculture, 2; Singing, 1; Military Drill  $2\frac{1}{2}$ ; Sewing, 5; Physical Culture, 5.

Winter Term — Agriculture, 2; Horticulture, 2; Veterinary Science, 2; Chemistry, 2; Botany, 2; Algebra, 2; English and Penmanship, 2; Mechanical Drawing,  $1\frac{1}{2}$ ; Singing, 1; Sewing, 4; Cooking, 10; Physical Culture, 4; Military Drill, 2; Carpenter Shop, 3.

Spring Term — Horticulture and Botany, 3; Agriculture, 2; Chemistry, 3; Veterinary Science, 2; Algebra, 2; English and Penmanship, 2; Singing, 1; Mechanical Drawing, 1; Sewing, 4; Cooking, 10; Physical Culture, 4; Military Drill, 2.

## THIRD YEAR.

Fall Term—Veterinary Science, 3; Agriculture, 3; Horticulture, 3; Entomology, 2; Organic Chemistry, 4; Geometry, 2; Rhetoricals, 1.

Winter Term—Agriculture, 3; Horticulture, 3; Agricultural Chemistry, 2; Veterinary Science, 2; Political Economy, 2; Surveying, 2; Rhetoricals, 1; Cooking, 10; Sewing, 4; Physical Culture, 4; Drawing, 3; Military Drill, 2; Carpentry, 4½.

Spring Term—Chemistry, 3; Veterinary Science, 2; Agriculture, 2; Horticulture, 2; Political Economy, 2; Rhetoricals, 1; Surveying, 3; Military Drill, 2½; Carpentry, 4½.

## FOURTH YEAR.

This class is composed of graduates of the school who have come back to take an additional year of advanced work, or in lines not touched upon when they were students.

Fall Term—Horticulture, 5; Veterinary Science, 5; English Literature, 2; Rhetoric, 2; Rhetoricals, 1; Military Drill, 2½.

Winter Term—Veterinary Science, 4; Agriculture, 2; Horticulture, 4; Rhetoric, 2; English Literature, 2; Rhetoricals, 1; Military Drill, 2; Carpenter Shop, 4½; Mechanical Drawing, 3.

Spring Term—Agriculture, 2; Horticulture, 4; Veterinary Science, 4; English Literature, 2; Rhetoric, 2; Rhetoricals, 1; Military Drill, 2½; Drawing, 2; Shop, 4½.

In all the above schedules, where laboratory work takes the place of lecture or recitation, two hours of the former are substituted for one hour of either of the latter.

## LIST OF TEXT-BOOKS USED.

- Johason's How Crops Grow.
- Stewart's Feeding Animals.
- Miles' Stock-Breeding.
- Avery's Inorganic Chemistry.
- Remsen's Organic Chemistry.
- Kedzie's Qualitative Chemistry.
- Thorpe's Quantitative Chemistry.
- Martin's Human Body.
- Gray's Lessons and Manual of Botany.
- Strong's Fruit Culture.
- Shaler's Text-Book of Geology.

Scott and Morton's Soil of the Farm.  
 Kiddle's Ganot's Physics.  
 Meservey's Bookkeeping.  
 Meservey's Political Economy.  
 Alden's Science of Government.  
 The Orphean (in music).  
 Bradbury's Arithmetic.  
 Wentworth's Algebra.  
 Wentworth's Geometry.  
 Wentworth's Trigonometry.  
 Wentworth's Surveying.  
 Raub's Practical Rhetoric.  
 Patterson's Elements of Grammar and Composition.  
 Curtiss' Horses, Cattle, Sheep, and Swine.  
 Greiner's How the Garden Pays.  
 Genung's Rhetorical Practice.  
 Selections from Standard English Authors.  
 Maury's Physical Geography.  
 Scudder's United States History.

Text-books are purchased at wholesale rates, and supplied to the pupils at cost.

## Commencement Exercises June 16, 1893.

The usual Commencement was held in June, at which the graduating class presented the following

### PROGRAMME.

MUSIC—Instrumental.

PRAYER.

Music—Pilgrim Chorus.....	<i>Verdi</i>
Glee Club.	
E. T. Beard.....	Milford
Use of Veterinary Science on the Farm.	
W. H. Bishop.....	Clintonville
Fertilizing with Green Crops.	
C. Brimble.....	Torrington
Tuberculosis.	
F. W. Darnstaedt.....	Hartford
Horse Breeding for Connecticut.	

W. B. Dayton.....	Plantsville
Bacteria as Scavengers.	
W. M. Dunivan.....	Hartford
Agricultural Legislation.	
C. W. Eddy.....	Simsbury
Silos and Silage.	
Music — Robin Adair.....	
Glee Club.	
E. B. Fitts.....	East Windsor Hill
Forestry.	
W. J. Frey.....	Suffield
Soiling.	
M. M. Frisbie.....	Southington
A Defense of Oleo.	
Music — Wedding To-Night — Jubilee Song.....	
Glee Club.	
H. C. Harrison.....	Northford
The Abandoned Farms of New England.	
F. C. Osborn.....	Litchfield
Connecticut Agriculture as Related to Supply and Demand.	
M. H. Parker.....	South Coventry
Care of Dairy Stock.	
Music — Water Mill.....	<i>Macy</i>
Glee Club.	
H. G. Sperry.....	Bolton
Shall the Sale of Oleo be Regulated.	
W. A. Warren.....	South Coventry
Sheep Raising for New England.	
CONFERRING OF DIPLOMAS.	
Music — Anna Laura.....	<i>Arr. by Emerson</i>
Glee Club.	
Address.....	Prof. W. O. Atwater
Industrial Education.	
Short Addresses.....	J. H. Hale and Others

## Prizes.

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The Alumni Association, again as in former years, at Commencement time, gave two prizes, \$10 and \$5, to the two members of the graduating class passing the best examination in practical agriculture.

The first prize went to M. H. Parker and the second to M. M. Frisbie. The examination was in charge of members of the Alumni Association and consisted in handling teams and practical work in field and garden.

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## Gifts.

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In addition to the large number of gifts of money from the Granges of the State, to purchase books for the library, as reported a year ago, several sums have been received during the current year from the following for the same purpose :

Farmington, No. 49, Farmington,	.	.	.	.	.	.	\$10 86
Suffield, No. 27, Suffield,	.	.	.	.	.	.	5 00
Quinatisset, No. 65, Thompson,	.	.	.	.	.	.	2 50
East Hartford, No. 37, East Hartford,	.	.	.	.	.	.	2 05
Wallingford, No. 33, Wallingford,	.	.	.	.	.	.	1 00

These donations have been very opportune, and enabled us to place on our shelves some very valuable and much-needed books.

Our library is still in great need of books to aid the several departments, and we cannot refrain from expressing the strong hope that at no very distant day some public-spirited person may be found who will supply this pressing want.

Dr. Noah Cressy, of Hartford, gave a fine skeleton of a lion to the museum, which will prove very valuable in the study of comparative anatomy and zoology.

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## The Library

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Has been much enhanced in value by the above gifts and a few purchased, and that the students may be able to get the most out of it, we have arranged to have the library open one hour every day, Sundays excepted, for consulting and drawing books, and plan to increase the time as circumstances warrant.



## Course of Lectures.

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The winter course of alternate Friday night lectures was continued, as in previous years, with the following programme :

Wm. A. King, "Equalization of Taxation."

Dr. Cressy (two lectures), "Veterinary Science."

Judge A. J. Coe, "The Farmer in Legislation."

Prof. W. O. Atwater, "The Work of the Agricultural Experiment Stations."

Rev. L. L. Potter, "Heredity."

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That candidates for admission may be able to judge approximately what ground our entrance examination covers, we give a list of the questions used in 1893. It is but fair to state, however, that we expect to raise the standard somewhat each year.

Those who were able to pass the following questions were admitted to the second year, while those not passing were assigned to the first year. (See schedule of studies.)

## List of Entrance Examination Questions.

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### ARITHMETIC.

1. What will a ton of hay cost at three-fourths of a cent per pound?
2. Divide fourteen by thirty-seven.
3. How many inches in one-half mile?
4. How many cubic feet in a room 9 feet wide, 14 feet long,  $8\frac{1}{2}$  feet high?
5. What will it cost to plaster the ceiling of the above room at 20 cents per square yard?
6. What will it cost to carpet the above room at 65 cents per square yard?
7. Divide equally four apples among five boys.
8. Find interest on \$500 for 4 years, 5 months, 6 days, at 6%.
9. Cube 145,  $\sqrt{18,225}$ .
10. What will one mile of stone wall cost at \$4 35 per rod?

## GEOGRAPHY.

1. Bound Connecticut and locate five of its largest rivers.
2. Name the peninsulas that project from the southern coast of Europe.
3. What is a river system? A river basin?
4. Name and locate an island or group of islands near each Continent.
5. Locate Chicago, Rio Janeiro, Bridgeport, Vienna, Atlanta, Melbourne, Buffalo, St. Petersburg.
6. For what is Connecticut noted?
7. What is a valley? A mountain range? A mountain system?
8. Why is the climate of Labrador colder than the western part of Europe in the same latitude?
9. Define latitude, longitude.
10. Name the leading industries of the United States.

## GRAMMAR.

1. What is meant by parts of speech?
2. How many cases are there?
3. What is conjugation?  
Name the modes of the verb.
4. What is tense?  
Name the tenses of the indicative mode.
5. What is a sentence?  
Give example of two forms of sentences.
6. Parse and analyze the following:  
"The boy stood on the burning deck."

## HISTORY.

1. Sketch the life of Columbus.
2. What was the cause of the Revolutionary War? War of 1812? War of 1861-5?
3. When, where, and by whom was Connecticut settled?
4. What Presidents died in office?
5. What persecuted people settled the different colonies?
6. What was the Missouri compromise?
7. What nations settled the different States?
8. State what you can concerning the "Merrimac" and the "Monitor."
9. Describe the "Boston Tea Party."
10. How many invasions of the North did Lee make?

## OUTFIT NEEDED.

"What is necessary in the way of clothing and outfit?" is a question commonly asked by those contemplating a course of study. To all such our reply is, "Good substantial clothing, such as is necessary for comfort and convenience at home." If we are asked to suggest, we mention, first, a pair of rubber shoes to protect the feet from wet, besides rubber boots and a rubber coat for protection when it becomes necessary to be out in the storm; since they are such a safeguard against hard colds and the worst forms of pneumonia, etc., no one can be without these very desirable articles of clothing. Also for farm work, any sort of substantial clothing, no matter if it is patched. The students dress to suit the character of their work.

The rooms are furnished with bedsteads, mattresses, and pillows, but students must supply themselves with blankets, also towels and napkins, and these, as well as all wearing apparel that goes to the laundry, should be plainly marked with the owner's name. Those desiring to carpet their rooms can do so. At least rugs or mats should be provided.

According to the act of the General Assembly establishing the College, "youth whose parents are citizens of the State," can be admitted, and according to the rules, must be 15 years old.

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## Expenses.

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No charge is made for rooms. Tuition is \$25.00 a year, but those who are in limited circumstances and show themselves worthy, can have it remitted.

Text-books, table board, washing, fuel, etc., are furnished at cost.

The whole expense per year, exclusive of tuition, averages about \$120.00 or \$125.00, and opportunities are afforded industrious pupils to earn from \$25.00 to \$75.00 a year, which is credited upon their bills.

## Location.

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The railroad station is Eagleville, seven miles north of Willimantic, on the New London Northern (Central Vermont) road, and is reached from Hartford by the New York & New England, and from New Haven by the Air Line, to Willimantic, where the road intersects these lines.

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## Labor and Inventory.

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### LABOR OF STUDENTS.

For farm, . . . . .	\$664 82
Permanent improvements on farm, . . . . .	115 17
Buildings and grounds, . . . . .	169 80
Greenhouse, . . . . .	68 40
Carpenter shop, . . . . .	22 21
Experiment station, . . . . .	29 47
School, . . . . .	89 14
Boarding department, . . . . .	162 53
Ice, . . . . .	40 62
Fuel, . . . . .	48 10
Total, . . . . .	\$1,410 26

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## Report of Prof. Chamberlain.

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*To the Honorable Board of Trustees of the Storrs Agricultural College :*

The following tables, showing the general condition of the farm, its products, equipment, and expenditure of labor for the year ending November 30, 1893, are hereby respectfully submitted.

During the year the same general policy of producing a variety of such crops as the boarding department of the College could profitably consume has been continued as during all preceding years. The amount of these products is increasing annually, and yet the limit of profitable production has not yet been reached or hardly approached. The past season has been in some respects phenomenal. The severe drouth of the early season of growth, and the storms which followed, resulted in great loss to several of the leading crops, including the potato, hay, and corn crops, also late sown forage and pasturage.

But little has been attempted in the line of permanent improvements in the farm beyond draining a small area of upland, and the labor required by the erection of much needed farm buildings. A small amount of labor has been performed in completing the grade in front of the College buildings. Most of the labor has been performed by the students.

L. P. CHAMBERLAIN,

*Farm Superintendent.*

#### LABOR ON PERMANENT IMPROVEMENTS.

Draining farm land, . . . . .	\$28 94
Grading and turfing about buildings, . . . . .	34 31
Removing stones from farm fields, . . . . .	9 25
Building wire fences, . . . . .	6 50
Building corn crib, . . . . .	41 63
Building farm shed, . . . . .	71 59
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	\$192 22

#### LABOR PERFORMED FOR SCHOOL.

By men and teams, . . . . .	\$48 34
Labor of students on adjoining farms, . . . . .	10 07
Labor of students, men, and teams for Horticultural Department, . . . . .	41 63
	<hr/>
	\$100 04

#### LIVE STOCK ON HAND DECEMBER 1, 1893.

1 pair of working oxen, . . . . .	\$140 00
1 pair of farm horses, . . . . .	300 00
4 grade short-horn cows, . . . . .	140 00
6 grade Guernsey cows, . . . . .	180 00
4 grade Jersey cows, . . . . .	120 00
1 grade Jersey heifer, . . . . .	20 00
7 calves raised in 1892, . . . . .	70 00
3 fat hogs, . . . . .	80 00
3 shoats, . . . . .	30 00
Poultry, . . . . .	60 00
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	\$1,140 00
Estimated value of farm implements, . . . . .	\$800 00

#### AMOUNT AND VALUE OF FARM AND GARDEN PRODUCTS.

43 tons of upland hay, . . . . .	\$688 00
1½ tons of Hungarian hay, . . . . .	24 00
8 tons of swamp hay, . . . . .	64 00
8 tons of bedding hay, . . . . .	48 00
60 tons of silage, . . . . .	125 00
3 tons of oat straw, . . . . .	24 00
1 ton of rye straw, . . . . .	12 00
¾ ton of squashes, . . . . .	37 50

327	bushels of ears of corn, . . . . .	\$98 10
20	bushels of parsnips, . . . . .	10 00
24	bushels of table beets, . . . . .	14 40
25	bushels of onions, . . . . .	15 00
130	bushels of fall turnips, . . . . .	26 00
36	bushels of rock turnips, . . . . .	10 80
12	bushels of tomatoes, . . . . .	6 00
8	bushels of pickles, . . . . .	8 00
6	bushels of cucumbers, . . . . .	3 00
10	bushels of Lima beans, . . . . .	7 50
6	bushels of pole beans, . . . . .	4 50
301	bushels of potatoes, . . . . .	180 60
6	bushels of sweet corn, . . . . .	4 50
106	bushels of oats, . . . . .	47 70
15½	bushels of buckwheat, . . . . .	11 62
9	bushels of rye, . . . . .	7 20
8	bushels of peas, . . . . .	8 00
16	bushels of apples, . . . . .	8 00
5	bushels of quinces, . . . . .	7 50
3	bushels of grapes, . . . . .	3 00
9	bushels of pears, . . . . .	11 25
1800	heads of celery, . . . . .	36 00
400	heads of cabbage, . . . . .	16 00
150	heads of lettuce, . . . . .	4 50
500	pounds of rhubarb, . . . . .	5 00
160	pounds of asparagus, . . . . .	19 20
94	quarts of raspberries, . . . . .	11 28
156	quarts of currants, . . . . .	15 60
3060	pounds of beef, . . . . .	177 78
670	pounds of pork, . . . . .	63 40
900	pounds of veal, . . . . .	53 30
7152	gallons of milk, . . . . .	1144 32
7	calves raised, . . . . .	70 00
	swine raised, . . . . .	80 00
	poultry raised, . . . . .	40 00

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\$3,158 25



## Treasurer's Report.

H. C. MILES, *Treasurer*,

*In account with* STORRS AGRICULTURAL COLLEGE.

1892.		DR.					
Sept.	30.	By balance of account,	.	.	.	.	\$2,331 03
Oct.	6.	By cash, B. F. Koons,	.	.	.	.	500 00
	24.	Note discounted,	.	.	.	.	1,958 00
	25.	Comptroller,	.	.	.	.	962 91
Nov.	2.	Experiment Station,	.	.	.	.	93 50
	12.	B. F. Koons,	.	.	.	.	500 00
	28.	Comptroller,	.	.	.	.	1,006 87
1893.							
Jan.	3.	Comptroller,	.	.	.	.	1,137 52
	9.	B. F. Koons,	.	.	.	.	500 00
	20.	Comptroller,	.	.	.	.	965 97
Feb.	4.	Experiment Station,	.	.	.	.	8 56
	17.	Note discounted,	.	.	.	.	1,959 00
Mch.	1.	Comptroller,	.	.	.	.	991 92
April	3.	B. F. Koons,	.	.	.	.	1,000 00
	5.	Comptroller,	.	.	.	.	1,163 64
	26.	B. F. Koons,	.	.	.	.	500 00
May	4.	Comptroller,	.	.	.	.	1,469 95
	8.	Comptroller,	.	.	.	.	10,801 18
June	5.	Comptroller,	.	.	.	.	884 04
	7.	Comptroller,	.	.	.	.	2,500 00
	6.	Experiment Station,	.	.	.	.	41 09
	26.	Comptroller,	.	.	.	.	923 19
July	5.	B. F. Koons,	.	.	.	.	1,200 00
	5.	Experiment Station,	.	.	.	.	3 10
	28.	Comptroller,	.	.	.	.	1,514 42
Aug.	26.	Comptroller,	.	.	.	.	914 83
	29.	B. F. Koons,	.	.	.	.	1,000 00
Sept.	15.	Comptroller,	.	.	.	.	1,114 78
	29.	Comptroller,	.	.	.	.	1,604 11
							\$39,549 61

1892-3		CR.					
		Paid Salaries,	.	.	.	.	\$5,977 14
		Chemicals and apparatus,	.	.	.	.	364 77
		Books, stationery, and school supplies,	.	.	.	.	761 50
		Painting,	.	.	.	.	93 14
		Postage,	.	.	.	.	58 07

Telephone, . . . . .	\$61 50
Traveling expenses, . . . . .	468 17
Freight and express, . . . . .	95 96
Fuel and lights, . . . . .	1,574 05
Shop outfit, . . . . .	53 47
Balance on church seat rent, . . . . .	5 00
Dormitory outfit, . . . . .	137 48
Kitchen outfit, . . . . .	165 87
Provisions, . . . . .	2,262 02
Servant hire, . . . . .	801 21
Buildings, . . . . .	1,740 73
Care of furnaces and buildings, . . . . .	195 26
Farm labor, . . . . .	496 46
Fertilizers, . . . . .	107 48
Farm supplies, . . . . .	91 31
Farm stock purchased, . . . . .	25 00
Feed purchased, . . . . .	372 10
Blacksmithing and repairing farm tools, . . . . .	80 06
Permanent improvements on farm, . . . . .	78 06
Notes, . . . . .	6,600 00
Interest, . . . . .	82 00
Insurance, . . . . .	57 50
Legal expenses, . . . . .	350 00
Artesian well and tower, . . . . .	10,887 00
Sundries, . . . . .	498 10
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	\$34,540 41
Balance of account, . . . . .	5,009 20
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	\$39,549 61

This certifies that we have examined the accounts of Henry C. Miles, Treasurer of the Storrs Agricultural School, for the fiscal year ending September 30, 1893, and compared them with the vouchers, and find the same correct. The balance in the hands of the Treasurer on said date amounted to five thousand and nine dollars and twenty cents (\$5,009.20).

HARTFORD, December 26, 1893.

E. LIVINGSTON WELLS, }	<i>Auditors of</i>
OSCAR LEACH, }	<i>Public Accounts.</i>





